

Brandeis University

Waltham, Massachusetts



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brandeis university bulletin

1971-1972



COVER: *An artistic likeness of Supreme Court Justice
Louis Dembitz Brandeis*

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Brandeis University

The
Graduate School
of Arts and
Sciences
1971–1972

WALTHAM, MASSACHUSETTS

"It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach . . .

"It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.

"It must ever be mindful that education is a precious treasure transmitted—a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust."

—from the writings of
LOUIS DEMBITZ BRANDEIS (1856–1941)
on the goals of a university.



*Louis Dembitz Brandeis
from a sculpture by Robert Berks*



Table of Contents

Academic Calendar	4
Brandeis University	7
The Graduate School of Arts and Sciences	19
General Information	19
Academic Regulations	28
General Degree Requirements	34
Fees	39
Areas of Study and Courses	46
Fellowships	195
Directories	211

Academic Calendar 1971/1972

Fall Term

Monday	September 13	Registration for new students, including payment of fees. Students who register later will be fined \$10.
Tuesday	September 14 and	Registration for returning students, including
Wednesday	September 15	payment of fees. Students who register later will be fined \$10.
Thursday	September 16 and	Opening days of instruction in courses.
Friday	September 17	
Monday	September 20 and	No University Exercises.
Tuesday	September 21	
Wednesday	September 29	No University Exercises.
Thursday	September 30	Final date for Fall Term registration with \$10 late fine.
Monday	October 4	No University Exercises.
Wednesday	October 6	Final date for changing program without \$10 late fine.
Monday	October 11	No University Exercises.
Thursday	October 14	Final date for <i>adding</i> courses with \$10 late fine.
Thursday	November 11	No University Exercises.
Thursday	November 25 and	No University Exercises.
Friday	November 26	
Wednesday	December 1	Final date for <i>dropping</i> courses with \$10 late fine. Last date for February degree candidates to submit final drafts of theses and dissertations to department chairmen, and to submit "Application for Degree" to Graduate School Office.
Friday	December 17	Winter Recess begins after last class.
Monday	January 3	Classes resume.
Friday	January 7	Final date for faculty certification that February Master's candidates have completed degree requirements, and that Ph.D. candidates have defended dissertations.
Tuesday	January 11 through	Registration of Spring Term for currently en-
Thursday	January 13	rolled students. Those who register later will be fined \$10.
Friday	January 14	Final date for February degree candidates to discharge all financial indebtedness to the University.
Monday	January 17	No University Exercises.
Tuesday	January 18 through	Mid-year examinations.
Friday	January 28	
Friday	January 28	Final date for deposit of Ph.D. dissertations at the Graduate School Office by February degree candidates. Grades due for Incompletes from Spring Term 1970-71. Final date for admission to candidacy for the Ph.D. degree and for completion of language requirements for students expecting to have the Ph.D. degree conferred in June 1972.

Friday	February 4	Grades due for all Fall Term courses. Spring Term registration for students entering for the first time or returning from leave. Those who register later will be fined \$10.
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Spring Term

Monday	February 7 and	Opening days of instruction in all courses.
Tuesday	February 8	
Monday	February 21	No University Exercises.
Tuesday	February 22	Final date for changing program without \$10 late fine. Final date for Spring Term registration with \$10 late fine.
Monday	February 28	Final date for <i>adding</i> courses with \$10 late fine.
Wednesday	March 1	Final date for students to file "Application for Financial Aid" for 1972-73.
Tuesday	March 28	Final date for <i>dropping</i> courses with \$10 late fine. Spring Recess begins after last class.
Monday	April 3	Last date for June degree candidates to submit final drafts of theses and dissertations to department chairmen, and to file "Application for Degree" with Graduate School Office.
Monday	April 10	Classes resume.
Monday	May 1	Final date for faculty certification that June Master's candidates have completed foreign language requirements.
Monday	May 15	Final date for faculty certification that June Ph.D. candidates have defended dissertations, and that Master's candidates have completed qualifying examination and theses. Final date for June degree candidates to discharge all financial indebtedness to the University.
Friday	May 19	No University Exercises.
Monday	May 22	No University Exercises.
Tuesday	May 23 through	Final examinations.
Friday	June 2	
Monday	May 29	No University Exercises.
Tuesday	June 6	Grades due for all June degree candidates and Incompletes for Fall Term courses. Final date for deposit of Ph.D. dissertations with the Graduate School Office.
Friday	June 9	Grades due for all Spring Term and full year courses. Final date for admission to candidacy for the Ph.D. degree and completion of language requirement for students who expect to have the Ph.D. conferred in February 1972.
Sunday	June 11	Commencement.



University Organization



Brandeis is one of the few small universities in the United States. The academic programs, described below, are each limited in size to encourage quality and integrity of intellectual achievement. There is constant interaction between college, graduate and professional schools, and institutes. The accomplishments of one set automatic pace for the others, and the interchange benefits all, creating an intellectual environment of decided vitality. Additionally, the organic richness of the extensive research activity fertilizes the undergraduate roots of the institution no less than the graduate and professional programs.

The College of Arts and Sciences

In keeping with its general objectives, Brandeis attaches the greatest of importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies as well as those whose educational objective is the baccalaureate degree.

The College of Arts and Sciences offers instruction in the Schools of Creative Arts, Humanities, Social Science and Science. Regularly matriculated students pursuing courses of instruction under the Faculty of Arts and Sciences may, upon satisfactory completion of the first year, continue as candidates for the Bachelor of Arts degree.

Established in 1948, full accreditation was received by Brandeis' College of Arts and Sciences from the New England Association of Colleges and Secondary Schools in 1953.

(Full information is available in the catalog of the College of Arts and Sciences.)



The Graduate School of Arts and Sciences

The Graduate School is designed to educate broadly as it trains professionally. It is sensitive to the fact that as specialization increases within society, the traditional boundaries between the Ph.D. and advanced professional degrees are gradually losing their distinctions. It seeks to achieve a spirit of informality, without sacrificing work disciplines.

The Graduate School of Arts and Sciences offers courses of study leading to the master's and doctor's degrees. Graduate areas include Anthropology, Astro-Physics, Biochemistry, Biology, Biophysics, Chemistry, Comparative History, Contemporary Jewish Studies, English and American Literature, History of American Civilization, History of Ideas, Mathematics, Mediterranean Studies, Music, Near Eastern and Judaic Studies, Philosophy, Physics, Politics, Psychology, Sociology and Theater Arts.

The Florence Heller Graduate School for Advanced Studies in Social Welfare

The Florence Heller Graduate School for Advanced Studies in Social Welfare, made possible through the generous grant of the late Mrs. Florence Heller of Chicago, was established at Brandeis University in 1959. The School has two basic educational programs:

1. The doctoral program for experienced social welfare practitioners who have the degree of Master of Social Work, or its equivalent, and experience on a professional level.
2. The pre-doctoral program for students without professional experience leading to the degrees of Master of Social Work and Doctor of Philosophy.

The program of study both for the experienced social welfare workers and beginners leads to the doctorate and is designed to qualify graduates for administrative and consultative roles in established areas of social work, as well as newly emergent areas such as international social work, inter-group organization, labor, industry and government. Emphasis is placed upon community organization, social work administration and research, making full use of the social sciences.

Students who enter the doctoral program are required to spend two years in residence. Those who enter the pre-doctoral program will receive the degree of Master of Social Work during the period of their doctoral study when they complete the requirements for the Master's degree.

(Full information is available in the catalog of the Heller Graduate School.)

Rosenstiel Medical Science Research Center

The Lewis S. Rosenstiel Medical Science Research Center will coordinate medically oriented work in biochemistry, biology, chemistry, microbiology, psychology, sociology and in the University's Florence Heller Graduate School for Advanced Studies in Social Welfare.

The Center, created through the largest single gift in the University's history, was made possible by Brandeis Fellow Lewis S. Rosenstiel. The Center will draw together Brandeis faculty members whose research work is medically related, without diminishing their teaching responsibilities or altering important research projects already underway. Simultaneously, under the leadership of a Director and the advice of a Faculty Council, the Center will gradually broaden its scope to encourage new research, invite the participation of distinguished scholars and medical scientists, offer hospitality for younger researchers at a fellowship level, sponsor symposia and colloquia, and underwrite scholarly publication.

Mr. Rosenstiel's gift also permits the University to construct a major science facility which will house the Center and offer the scientists working in the Center the most sophisticated and modern scientific equipment and facilities.

At the same time, the Rosenstiel Biochemistry Program, established by the Dorothy H. and Lewis S. Rosenstiel Foundation in 1957, "in support of research in the natural sciences with primary emphasis in biochemistry," will continue undiminished. The program now includes more than 70 graduate and postgraduate research fellows.

Endowed Schools

The Danielsen School of Philosophy, Ethics and Religious Thought

The Albert V. Danielsen School of Philosophy, Ethics and Religious Thought was made possible through a gift from a Fellow of the University from Wellesley Hills, Massachusetts.

The School includes the Department of Philosophy which now combines undergraduate and graduate programs through the M.A. and Ph.D. degrees. The graduate program in philosophy is designed to prepare students for careers in the field as scholars and teachers, and it places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. Added to the two fully endowed chairs of philosophy in the School is the Albert V. Danielsen Chair in Christian Thought, and plans are now underway for the establishment of the Pope John XXIII Chair in Catholic Thought.

The Danielsen School thus hopes to encourage the advancement of philosophical thought in the context of contemporary issues, following the broadest scholarly and interdisciplinary approaches in an age of ecumenism and imperative social need.

Fierman School of Chemistry

The Harold and Minnie Fierman School of Chemistry, created through a benefaction from Brandeis Trustee Harold Fierman, incorporates graduate and undergraduate programs, including research activities, lecture programs and colloquia. The American Council on Education has cited the Brandeis program as a national leader in the field of graduate study.

At the undergraduate level the curriculum is highly diversified, including basic courses in analytical, nuclear, organic and physical chemistry, as well as chemical kinetics and structure determination of crystals and molecules.

At the graduate level, M.A. and Ph.D. candidates pursue advanced studies and research projects in quantum chemistry, enzyme reactions and synthetic and theoretical chemistry. Graduate students at Brandeis hold National Science Foundation Fellowships, National Institutes of Health Fellowships and National Aeronautic and Space Administration Traineeships, among others.

The School has been aided, in part, by grants from the Atomic Energy Commission and the National Science Foundation.

The Fisher School of Physics

The Martin Fisher School of Physics was established through a gift from Martin Fisher of New York City, a Fellow of the University. The School is

designed to strengthen the physics curriculum and emphasize both theoretical and experimental physics.

Through scholarship and fellowship assistance provided by Mr. Fisher, teaching and research at the undergraduate, graduate and post-doctoral levels will be enhanced, and a setting provided for lectures, colloquia and scholarly publications produced by the School.

The School's undergraduate program ranges from introductory courses in classical and modern physics, computer sciences and astronomy, to atomic and nuclear physics, theoretical and continuum mechanics, quantum mechanics, high and low energy nuclear, solid state and mathematical physics. M.A. and Ph.D. programs include 12 research courses, courses in astrophysics, atomic and plasma physics, quantum theory of fields and solids and courses in general and special theories of relativity.

Grants from such agencies as the National Science Foundation, the Atomic Energy Commission and the Bureau of Naval Research, among others, support research programs in the Fisher School.

The Kutz School of Biology

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Delaware. The School encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas with special heed to new discoveries and the results of current experimentation.

Students are offered a well-conceived balance between traditional background in biology and the thorough discussion of new knowledge constantly developing in this discipline. They are also encouraged to engage in original research and independent study. The biology program, directed and taught by first-rank scientists, also provides research and teaching opportunities for a large number of post doctoral fellows.

A sizable portion of the governmental, industrial and private research grants awarded to the University are devoted to varied projects in biology, including cancer research. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

Lown School of Near Eastern and Judaic Studies

Created through the generosity of Brandeis Trustee Philip W. Lown of West Newton, Massachusetts, the Lown School of Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture and issues, offered by both the undergraduate and graduate departments of Near Eastern and Judaic Studies.

The University has assembled an array of distinguished scholars who offer an extremely broad complex of programs designed to prepare them for scholarly careers or for communal service.

The School includes the Center for Contemporary Jewish Studies, organized for the specific purpose of further research and seminars dealing with major contemporary issues.

The Lown School of Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters building on the Brandeis University campus was completed during 1968.

Related Academic Programs

Wien International Scholarship and Fellowship Program

The Wien International Scholarship Program, created in 1958 by the Lawrence A. and Mae Wien Fund, is designed to further international understanding, to provide foreign students with opportunities for study in the United States, and to enrich the intellectual and cultural life of the Brandeis campus.

The Program permits the University to offer scholarships and fellowships on the undergraduate and graduate levels. The undergraduate scholarship covers the basic costs of tuition, on-campus board and room, and standard student fees. In some instances, based upon financial need, the grant may be extended to include book allowances, a weekly maintenance allowance, and—on very rare occasions—travel. Awards made for a single academic year to students who are candidates for a degree may be renewed upon application. Renewals may be granted by the Committee on the Admission of Wien Scholars and its decision is final.

Undergraduate applicants may also be accepted as Special Students. Such students must have completed at least the first degree in their home countries. With the consent of the Director of the Program, they may then take courses at Brandeis which do not duplicate those studied at their home universities. Grants for Special Students are given for only one year and may not be renewed. It is expected that Special Students will apply for this “year abroad” in order to enhance and complement work taken in their own countries, and that these students will return to their home universities when their year at Brandeis has been completed.

All applicants for both the undergraduate and graduate grants must have a thorough knowledge of the English language inasmuch as all students study within the regularly organized curriculum. In addition, opportunities are provided for all Wien Scholars to attend special seminars, conferences, and field trips which are planned to provide an understanding of many facets of American society.

The Wien Program participates with Harvard, Boston College, Boston University, and Massachusetts Institute of Technology in the BASIS (Boston Area Seminar for International Students) summer orientation program which is open to students who have been admitted to these universities. This program facilitates the adjustment of foreign students to American academic communities. Foreign students also have the privilege of participating in a program-oriented, home-stay schedule of visits and hospitality developed through the Wien Office.

Inquiries concerning the undergraduate program should be addressed to the Wien International Scholarship Program at the University and should contain a brief resumé of the applicant's scholastic background and field of interest. Inquiries concerning the graduate program may be addressed either to the Wien Office or to the Graduate School itself.

The Abram L. Sachar International Coordinated Degree Program

The Abram L. Sachar International Coordinated Degree Program was set up by the Trustees in tribute to the twenty years of incumbency of the first President. It is a highly selective program that sends Brandeis graduate and undergraduate students to outstanding foreign universities for up to two years to round out the training that they have had at Brandeis. The program was modestly initiated in the 1969-70 academic year in about a dozen foreign universities with whom special arrangements have been completed. These include such African universities as Ife in Nigeria; Makerere in Uganda; the University of Ghana in Ghana; Abidjan in the Ivory Coast; Sussex in England; the Hebrew University in Israel; the University of the Andes in Colombia. In succeeding years it is expected that other universities in various parts of the world will be included in the collaboration arrangements.

The program operates on a variety of levels. For example, a graduate student upon completion of his qualifying examination may pursue his advanced research at a university especially appropriate to his interests. Or an unusually well-qualified undergraduate may obtain permission from his department to spend two years (or a portion thereof) at a foreign university which has offerings not available or not as highly specialized as at Brandeis. Validation for work done abroad depends upon departmental approval. In some cases participation in the program may lead to the awarding of joint or coordinated degrees from both universities.

Although the emphasis of the program is upon students, provision has also been made for occasional special faculty grants to provide opportunities for Brandeis faculty to complete specialized research in foreign universities.

Since the Sachar Scholarship and Fellowship holders continue to be Brandeis degree candidates, they are expected, while overseas, to keep in close touch with their Brandeis academic advisers. At the same time, it is expected that they will work under direct supervision at the foreign university where they are enrolled.

All expenses for the scholarships and fellowships will be underwritten by the Sachar Tribute Fund. Applications for inclusion are to be directed to the Office of International Studies and will be evaluated and processed by a special faculty committee.

Robert and Jean Benjamin Center for International Studies

Underwritten by Brandeis Trustee Robert S. Benjamin, board chairman of United Artists Corporation, the Center for International Studies will support both teaching and research. It will embrace undergraduates, graduate students, resident faculty, visiting scholars and experts.

The Center's primary function will be to serve as the organizing instrument for teaching and research focusing on selective themes of scholarly importance to international studies and to the pursuit of peace.

The Center will devote itself to the theme of the international consequences of modernization in terms of a variety of topics. Any topic chosen will be explored in a number of ways.

The first and constant objective will be to combine teaching and research in a way that will benefit and stimulate teachers, graduate students and undergraduates alike.

The daily operation of the Center will be the responsibility of a director and a board of faculty advisers. The advisers will be drawn from the various departments that are most concerned with international affairs.



Facilities Projected and Under Construction

Coffman Residence Hall

Brandeis Fellow Max Coffman of Brockton, Mass., has established a fund which will enable the University to expand dormitory space in the future to keep pace with expected growth of the student body.

Epstein Campus Service Center

Underwritten by Brandeis Trustee and Mrs. Rubin Epstein of Chestnut Hill, Massachusetts, the Epstein Campus Service Center will house several administrative departments of the University, including the Purchasing Department, the Buildings and Grounds Department, and the University's major service facilities, including repair and maintenance shops and stock and storage areas.

Feldberg Computer Center

Planned for the near future is the Feldberg Computer Center, which will be a gift of the Feldberg Family of Brookline, Massachusetts. It will be located centrally on campus. This Center will house the most up-to-date computer equipment for work supporting research in life, natural and social sciences, humanities and the arts, as well as in meeting teaching and administrative needs.

Lown Near East and Judaic Studies Center

The continuing growth in emphasis on Near East, Judaic and Contemporary Jewish Studies has made it necessary to provide additional facilities to accommodate existing and projected University programs in those areas. Through a generous benefaction of Mr. Philip Lown of Newton, Massachusetts, a member of the Board of Trustees, the University has been able to plan the new Lown Near East and Judaic Studies Center. Located in the Academic Quadrangle, adjacent to the Shiffman Humanities Center, this building, will contain classrooms, seminar rooms, faculty offices, graduate study spaces, a language laboratory, an archeological studies laboratory, and an auditorium seating approximately 100 persons.

Mailman Psychological Counseling Center

The Mailman Psychological Counseling Center is a gift of Abraham and Joseph Mailman of Hollywood, Florida and New York City. When completed, the Mailman Center will house the University's psychological counselling staff. The Mailman Psychological Counseling Center will be located adjacent to the Stoneman Infirmary, fronting on South Street.

Pollack Fine Arts Teaching Center

The expanded art teaching program at the University has made it necessary to provide additional facilities. The Maurice Pollack Fine Arts Teaching Center will include studio space for the artist-in-residence, a specially designed lecture hall for teaching art history, a multi-purpose studio and photo study room, and additional faculty offices. This center will be located between the existing Goldman-Schwartz Art Teaching Center and the expanded Rose Art Museum. It has been planned as a major link between the art teaching and art exhibit areas. The Pollack Center is a gift of the Pollack Foundation of Quebec City, Quebec, Canada.

Remis International Graduate Quadrangle

In order to meet the very substantial need for housing for the University's large number of foreign students, graduate students, married undergraduate students, post-doctoral fellows and young faculty, the University has undertaken the planning of an International Quadrangle which will not only provide needed apartments, but will also become an "International Living" center, including meeting rooms, a library, recreational and social facilities. The Quadrangle, will include living quarters for approximately 300 families.

The underwriting of this project has been generously provided by Brandeis Trustee and Mrs. Harry Remis of Boston, Massachusetts. It will be located on a tract of land bordering the Charles River, and within short walking distance of the main campus.

Rosenstiel Medical Science Research Building

The Lewis S. Rosenstiel Medical Science Research Building is a major science research facility which will house all of the activities of the Rosenstiel Research Center and will offer the scientists working in the Center the most sophisticated and modern scientific facilities and equipment. Located adjacent to existing Biochemistry facilities, the Rosenstiel Building will have three floors devoted to laboratories and specialized research spaces. In addition, the building will include administrative offices, seminars, a research library, glass blowing facilities and a large instrument resource room. The Rosenstiel Medical Science Research Building, created through the largest single gift in the University's history, was made possible by Brandeis Fellow Lewis S. Rosenstiel of Miami Beach, Fla.



Faculty Center

Sachar International Studies Center

The Center, conceived as a tribute to Dr. Abram L. Sachar, first President of Brandeis University, will include classrooms, meeting rooms, a lecture hall, a library-lounge facility, administrative office spaces for all international programs, faculty offices, and the office of the Chancellor of the University. Underwriting for this facility has been provided by gifts from a large number of individuals as tribute to Dr. Sachar. The lecture hall has been underwritten by Brandeis Fellow Mrs. Evelyn Silver of Northboro, Massachusetts; the library by Fellow and Mrs. Jack Lazar of New York City and an imposing outdoor terrace by Fellow and Mrs. Edward Goldstein of Boston, Massachusetts.



The Graduate School of Arts and Sciences



General Information

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, ex officio; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained

by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements set forth below cannot, therefore, be regarded as the sole requisite for degrees.

Areas of Graduate Study

During the academic year 1970–71, graduate programs will be offered in the following areas:

- | | |
|-------------------------------------|-------------------------------------|
| 1. Anthropology | 11. Mathematics |
| 2. Biochemistry | 12. Mediterranean Studies |
| 3. Biology | 13. Music |
| 4. Biophysics | 14. Near Eastern and Judaic Studies |
| 5. Chemistry | 15. Philosophy |
| 6. Comparative History | 16. Physics and Astrophysics |
| 7. Contemporary Jewish Studies | 17. Politics |
| 8. English and American Literature | 18. Psychology |
| 9. History of American Civilization | 19. Sociology |
| 10. History of Ideas | 20. Theater Arts |

Details of the programs and courses offered in these areas are given below.

Graduate study in Social Welfare is offered by the Florence Heller Graduate School for Advanced Studies in Social Welfare. For further information see the catalog of the Heller School.

Graduate School Office

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

Housing

The University does not have on-campus housing for graduate students. The Off-Campus Housing Bureau, located in Ford Hall, attempts to serve as a clearing house for rooms, apartments and houses available in Waltham and near-by Greater Boston communities.

Dining Facilities

Graduate students may sign for either the twenty-one or the fifteen-meal contracts in either Kutz Hall or the Sherman Student Center Dining Hall. Arrangements must be made with the Steward's Office. A separate kitchen is maintained in the Sherman Student Center for those wishing kosher meals. Individual meals may be purchased at either dining hall. Light snacks are served at the Castle Snack Bar.

Office of International Programs

This office administers the Wien International Scholarship Program, the largest privately endowed foreign scholarship program in the United States, and serves as the counseling center for the more than one hundred students who come here from Asia, Africa, Europe and South America. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U. S. Immigration Service in obtaining working permits and documents necessary for extended periods of study, and in other technical matters which may arise. (See page 12)

In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Coordinated Degree program (see page 13), and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on university accredited programs should consult this office.

The University Health Services

The Director and his staff are responsible for providing for the physical and emotional well-being of students. Payment of the health fee, now included in the tuition, entitles students to services available at the David A. Stoneman Infirmary and at the Psychological Counseling Center, currently located in Lemberg Hall. In addition, the student is entitled to participate in the Student Health Insurance Plan. Except for limited day-care facilities, the Health Services and the use of the Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the College and the Graduate Schools are responsible for the submission of a Health Examination Report completed by their family or personal physician. In addition to information about previous health and details of the physical examination, evidence of immunization against smallpox and tetanus are required. If possible, protection against poliomyelitis is desirable. Since students may not



Goldsmith Mathematics Center

register until these requirements have been satisfied, it is strongly recommended that reports be submitted by July 1.

The Student Health Insurance Plan helps to defray expenses for a period of one year, commencing September 1, for care situations which are beyond the scope of the Health Services. A brochure outlining the details of the Plan as well as the services offered by the University Health Services is distributed to each student at registration and copies are mailed to parents. Students and parents are urgently requested to read this brochure and keep it for reference. Whereas situations not covered within the Health Services or by the Insurance Plan are infrequent, an awareness of these possibilities will tend to lessen misunderstanding and disappointment. In such instances students and their parents will be responsible for expenses which are not covered by the University health program or its associated insurance policy.

Within the limitations of the insurance coverage, fees of physicians who are not members of the Health Services staff, laboratories and hospitals will be processed for payment only when consultations, laboratory or x-ray studies or hospitalization have been authorized by the University Health Services in advance on a form provided for this purpose. The University is not responsible for off-campus medical and hospital care sought by students or their parents on their own initiative, or for outside care or consultation which has not been authorized previously by the Health services. The only exception to this is in case of an emergency, or illnesses or injuries occurring while away from the University, when such prior authorization is not feasible.

The Psychological Counseling Center

The Psychological Counseling Center, which is a part of the University Health Services, is currently located in Lemberg Hall. It provides professional assistance to students who have personal or emotional problems. Those who wish such help may refer themselves directly to the Center. Their communications with the staff are held in strict confidence.

Admission

As a rule only well-qualified men and women who have completed the normal four-year program leading to the Bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a Bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate programs in biochemistry, biophysics, history of American civilization, politics and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. All other applicants for admission are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, 200 Nassau Street, Princeton, New Jersey 08540, or 1947 Center Street, Berkeley, California 94704.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. This includes comprehensive testing in auditory comprehension, reading comprehension, writing, vocabulary, and grammar. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A. The test is administered at various established centers abroad.

Application

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" and, if needed, the "Application for Financial Aid" should be completed and returned in duplicate as soon as possible. The closing date for receipt of applications

for admission is the first business day in March, though exceptions may be made. Applicants requesting financial aid should file as early as possible.

Applications for admission for the Spring Term must be filed by December 15. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

The applicant must arrange to forward, *in duplicate*, official transcripts of all undergraduate and graduate work. In addition, he must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom the applicant has studied in the field of his proposed area of study. An applicant who has engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom he has done graduate work.

Applicants for admission to the following graduate programs must also submit samples of their written work as indicated:

Comparative History—one paper, preferably in European history

English and American Literature—two samples of written work

Music Theory and Composition—samples of original work

Theater Arts—Dramatic Writing—one original script

Theater Arts—Design-Technical—a portfolio of sketches

All applications for admission must be accompanied by an application fee of \$15, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applications are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by: the distinction of his previous record, particularly in his proposed area of study; the confidential letters of recommendation submitted in support of his application; and his adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the department or committee responsible for the graduate program to which the applicant seeks admittance. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results of the competition. Applicants for admission will be notified in April.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he must accept the offer of admission and awards, if any. If a student selected for admission indicates that he does not intend to accept the offer, or if he fails to reply by the date specified, his admission offer becomes void and another applicant may be accepted in his place.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of a graduate scholarship, fellowship, traineeship, or graduate assistantship for the next academic year by an actual or prospective student completes an agreement which both student and the graduate school expect to honor. In those instances in which the student indicates his acceptance prior to April 15 and subsequently desires to change his plans, he may submit in writing a resignation of his appointment at any time through April 15 in order to accept another scholarship, fellowship, traineeship, or graduate assistantship. However, an acceptance given or left in force after April 15 commits him not to accept another appointment without first obtaining formal release for the purpose."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in progress at the time of acceptance. In addition, students who are accepted *are required to complete and return a Medical Questionnaire and a health insurance form*, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he should notify the Dean of the Graduate School as soon as possible. If such a student wishes

to be admitted for a subsequent academic year, he must request reactivation of his application at the appropriate time, and bring it up to date.

An applicant who has been denied admission may reapply in a later year, particularly if he has had further training which would strengthen his application or if he can submit additional letters of recommendations.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the Department or Committee administering the program of study.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a Master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in April of each year if not requesting financial aid, or by the first business day in March if requesting financial aid. The application for readmission must be filed with the Graduate School Office.

Foreign Students

Graduates of foreign colleges and universities who have the equivalent of an American Bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance.

In order to ascertain the eligibility of the candidate, Brandeis University requires that each applicant file a *Preliminary Request for Application* form which may be obtained by writing to either the Graduate School of Arts and Sciences or the Office of International Programs any time before September 1 of the year preceding the anticipated admission date. This information will be evaluated and the application form itself will be sent to those who qualify.

Final applications must be completed and returned by March of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

Entrance Examinations. All applicants whose major language of instruction is not English must take the Test of English as a Foreign Language

(TOEFL); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may *require* this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, New Jersey 08540.

Financial Aid. Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expense. Hence the student, when applying for admission, should indicate his means of financial support. At least \$3,000 in United States dollars is necessary to cover living costs for the nine month academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

A small number of Wien International Fellowships may be granted to outstanding doctoral candidates.

Employment. The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. The student should be aware of this restriction in making his financial plans. During the summer vacation, however, the Immigration Service usually permits the student to obtain work to support himself, and even sometimes to meet some personal expenses for the following academic year. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.



Rose Art Museum

Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether the student is attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10.00 if registration is not completed at the time specified in the Academic Calendar for the Graduate School.

Registration consists of payment of all fees for the semester and filing a program card and other required forms duly completed.

Program of Study

Before filing his Program Card, the student should plan his program of study in consultation with the chairman of his department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

A graduate student may not normally register for an undergraduate course (numbered below 100) in his own area for degree or residence credit unless he secures the signed approval of both the instructor of that course and his department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive his approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the program card at Spring Registration, and ordinarily they may not be dropped at midyear. A student wishing to drop a full-year course at midyear must petition the Dean of the Graduate

School for permission, after receiving the written approval of the instructor of the course and of the chairman of his department. No student may register at midyear for a full-year course without the written approval of the instructor of the course and his department chairman.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except those classified as special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course may be audited without the permission of the instructor. An auditor is merely a listener. He may not take examinations or receive evaluation from the instructor. No credit is granted for an audited course.

Change of Program

A registered student who wishes to drop or add a course or alter his program of study must obtain a Course Change Card from the Graduate School Office and return it when properly filled out. Credit will not otherwise be given for the courses changed. In addition, a student must change his program within the specified time limits stated in the current academic calendar, or he will be subject to a \$10.00 fine.

Students may not drop courses after December 1 in the first term or after April 1 in the second term of the academic year.

Registration in Terms of Time

An advanced student—one who has completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere—may register in terms of time, subject to the signed approval of his department chairman. His Program Card must indicate that he is registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for the advanced graduate student. Registration in terms of time frees the student to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although a student registering in terms of time will usually register for an advanced research or dissertation course. His time will be spent in such research and reading as will be most beneficial to his development as a scholar.

Absence from Examinations

A student who is absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No student may be excused from such examination unless for emergency or medical reasons, nor may he be excused if he was able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department. The department will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. Courses graded "Non-credit" are those which carry no credit but which are required of the student. In thesis or research courses, if a letter grade cannot be given at the end of each semester or academic year, "Credit" or "No Credit" may be used.

"No Credit" and any letter grade below "B-minus" are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue to all registered students a report of their grades and of degree requirements that have been completed satisfactorily.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc." resolution of that grade to a letter grade must occur within six weeks of the beginning of the next academic semester. If a student requires additional time to settle an incomplete grade, he may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate work taken elsewhere may not be counted toward fulfillment of the residence requirement at Brandeis University for the degree of Master of Arts, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. Not more than one semester of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Master of Fine Arts. Not more than one year of residence credit for work taken elsewhere may be counted toward fulfillment of the residence requirement for the degree of Doctor of Philosophy.

A student admitted to a Ph.D. program at Brandeis University who has done graduate work elsewhere may file an application to have his work at that institution counted toward fulfillment of residence requirements. However, language requirements, qualifying and comprehensive examinations, the dissertation and the final oral examination, and other such requirements must be fulfilled while enrolled at Brandeis.

To be eligible to receive credit toward fulfillment of residence requirements for work taken elsewhere, a student must complete at least one semester's residence at Brandeis as a full-time student. He may then file an "Application for Credit for Graduate Work Done Elsewhere." The completed application should be submitted to the Graduate School Office, which will advise the student of the action taken on his application. An applicant will not necessarily be given the credit he requests. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of his area of study. In any case, every candidate for the Ph.D. degree must complete at least one year in residence at Brandeis as a full-time student, or the equivalent thereof in part-time study.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student for any given degree.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study.

Master of Fine Arts

The minimum residence requirement for all students is three academic semesters on a full-time graduate credit program for each semester, at the full tuition rate for each semester, or the equivalent thereof in part-time study.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full-tuition rate for each year, or the equivalent thereof in part-time study.

Full-Time Resident Students

A full-time student is one who devotes his entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of his department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by his department chairman, but no student may receive credit for, or be charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see p. 40).

Part-Time Resident Students

A part-time student is one who devotes less than his entire time to a program of graduate work at Brandeis University. He may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of his department chairman, who may restrict the time permitted for such employment.

Students wishing to pursue part-time resident study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time

study is not possible. An enrolled student receiving financial aid from the University, who wishes to change his status from a full-time to a part-time resident, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

On occasion, properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. A special student who later wishes to change his status to that of a part-time or full-time student working for a degree must apply for admission as a resident student. He must also file a special petition if he wishes credit to be accepted for any courses taken at Brandeis as a special student. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leave of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leave of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he must request such extension in writing before his leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

A graduate student who has completed residence requirements and who is not registered during the period in which he is completing degree requirements is considered a Continuation Student. A student in this category is not eligible for a leave of absence.

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to his department chairman and to the Dean of the Graduate School. Failure to comply with this procedure for withdrawing may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript of his record, and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the Controller's Office.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, through disciplinary procedures established in the Graduate School. Neither the University nor any of its Trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its Trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

General Degree Requirements

The following general requirements apply to the awarding of graduate degrees in all areas of study. For the specific requirements of each program of study, students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a Master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study. Each course meeting three hours per week grants three credits per semester. Certain departments may at their option require more than twenty-four hours



of graduate study. All departments offering Master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the Master's degree, two copies must be submitted to the department chairman in final form no later than January 8 for a February degree or May 14 for a June degree.

The Master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction thirty-six semester hours of course work at the graduate level, and must meet the specific requirements for the degree set forth under the Music Department, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than January 8 for a February degree or May 14 for a June degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete forty-eight hours of course work at the graduate level, and must meet the specific requirements for the degree outlined under Theater Arts, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Students enrolled for specialization in play-writing must submit two copies of a play in final form, in lieu of a thesis, to the department chairman no later than January 8 for a February degree or May 14 for a June degree.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each Department or Committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates, except in American Civilization, Philosophy and Psychology, must demonstrate proficiency in at least two foreign languages. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for award of the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred. Doctoral dissertations must be submitted to department chairmen by December 1 for February degrees, and April 1 for June degrees. In addition, notification that the doctoral dissertation has been approved and that the dissertation examination has been passed must have been communicated to the Dean of the Graduate School no later than January 8 in the case of February degrees or May 14 in the case of June degrees.

Students entering Brandeis University with no previous graduate work must earn the Doctor's degree within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

Language Requirements

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A. degree. A reading knowledge of at least two foreign languages is required of all students engaged in study leading to the M.F.A. in Music. Students in the M.F.A. program in Theater Arts with a specialization in Dramatic Writing must demonstrate a reading knowledge of at least one foreign language. A reading knowledge of at least two foreign languages is required of all students engaged in pro-

grams of study leading to the Ph.D. degree. *Exceptions:* One foreign language is required in History of American Civilization, Philosophy and Psychology. Candidates for the Ph.D. degree in Music are required, with certain exceptions, to have a reading knowledge of three foreign languages. Graduate departments may require degree candidates to demonstrate proficiency in additional languages. Each department determines which languages are acceptable as satisfying the foreign language requirements.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements. The student should present himself for at least one language examination during his first year of residence.

A student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the University for the second year.

All Ph.D. candidates must pass their second language examination no later than the semester preceding the semester in which the degree is to be conferred.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of his field at a level satisfactory to his Department or Committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific Department or Committee requirements for admission to candidacy may, at the recommendation of the Department or Committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the award of the degree, the student must be admitted to candidacy at least one semester before the degree is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a February degree and no later than April 1 for a June degree of the academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's Department or Committee that his application be approved, his record will be reviewed by the Graduate Council which

recommends him to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and April 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred. The style and format of all dissertations are determined by the respective departments. The chairman will then appoint two or more readers, besides the principal supervisor, to read the candidate's dissertation. Certification of the approval of the dissertation by these readers will be communicated to the Dean of the Graduate School and the chairman of the Department or Committee. The chairman will then schedule a final oral examination and notify both the Dean of the Graduate School and the candidate of the time and place of the examination at least three weeks prior to the scheduled date of the dissertation defense.

The dissertation, when approved by the readers, must then be deposited in the Office of the Graduate School, where it will be available to all interested members of the faculty for at least two weeks prior to the final oral examination.

The Dean of the Graduate School will publish in the *University Gazette* the time and place of a candidate's final oral examination and the title of his doctoral dissertation. The final oral examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members of other institutions.

The Examining Committee, recommended by the department chairman and approved by the Dean of the Graduate School must be composed of a minimum of three faculty examiners. At least one member of the committee shall be from a graduate area outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his Department or Committee of his responsibility for coverage at the examination.

A report, signed by the Examining Committee, certifying the candidate's successful performance on the final oral examination, will be submitted to the Dean of the Graduate School no later than January 8 for a February degree or May 14 for a June degree of the year in which the degree is to be conferred.

Deposit and Publication of Dissertation

By January 29 for February degree candidates, or June 1 for June degree candidates, the candidate must deposit two copies of his finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other by the department, both in bound form. The candidate must also submit two copies of an abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.

Fees

All fees are payable on the dates they are due. In exceptional cases, students may make prior arrangements with the Controller's Office for installment payments. A candidate for a June degree must pay any outstanding indebtedness to the University by May 15 just prior to Commencement, or his name will be stricken from the rolls of degree candidates. Candidates for February degrees must pay any outstanding indebtedness by January 17 of the year in which the degree is conferred.

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration and who has not made alternative arrangements for payment with the Controller's Office will be refused the privilege of registration. A registered student who defaults in the payment of indebtedness to the University shall be subject to suspension, dismissal and refusal of a transfer of credits or issuance of a transcript. A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

Application Fee: \$15.00. Payable by all applicants for admission at the time the application for admission is submitted and is not refundable. Checks and money orders should be made payable to the order of Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1970-71 are as follows:

Full-time resident students: \$2,525 per year, or \$1,262.50 per semester.
 Part-time resident students:

<i>Per Semester</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$946.88	\$1,893.75	Three-quarters
\$631.25	\$1,262.50	One-half
\$315.63	\$ 631.25	One-quarter

Special Students: \$315.63 per course per semester.

In view of constantly increasing costs of education, a student may expect one or more tuition increases during his academic career.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$250. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided his department chairman approves of the program of study as being a full-time program and signs the program card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete his residence requirements, but wishes to register for additional courses or take a fuller program of study, he shall be charged for the part-time program needed to complete his residence, plus the post-residence fee.

Summer Tuition Fee: Brandeis University does not conduct a regular summer school session. However, special courses of study on an individual basis may be arranged for regular students. The tuition for graduate students who remain in residence for special summer programs of a twelve week duration is \$500.00, and of an eight week duration, \$350.00.

Late Registration Fee: \$10.00. Payable for failure to complete registration at the time announced by the Graduate School Office. (Consult the Academic Calendar.)

Change-of-Program Fee: \$10.00. Payable by any graduate student who wishes to change his program of study later than two weeks after the first meeting of classes in each semester.

Continuation Fee: \$10.00. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leave of absence.

Master's Fee: \$50.00. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who submits a Master's thesis or takes a qualifying examination in any semester following one in which he has not been in residence, shall pay the Master's Fee. The fee is chargeable only once. The Continuation Fee will be applied toward payment of the Master's Fee.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the doctoral dissertation, the publication of the abstract of the dissertation in *Dissertation Abstracts*, copyright protection for the author if desired, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation for use in the University Library, and the Xerox-printed copies in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for the candidates at graduation and cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

Reinstatement Fee: \$10.00. Payable by a student who, after suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

Transcript Fee: \$1.00. Students, former students and graduates who request official transcripts of their records in the Graduate School are charged \$1.00 for each copy issued after the first one, which is issued free of charge. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

Diploma Fee: \$10.00. Payable by candidates for the M.A. and M.F.A. degrees.

Students Health Plan Fee: \$92.14. Payment of the mandatory Health Plan Fee entitles the graduate student to utilize the facilities of the Health Office during the academic year and to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable.

Exceptions: The University Student Health Plan is optional for special students.

Dependent Coverage: Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$246.96. Special students are not eligible for this plan.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws within 30 days from the beginning of classes, he may petition the Controller for a partial refund of tuition. A refund may be denied without any reason for such denial being stated.



Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid unless he files with the Graduate School Office an "Application for Financial Assistance" by the first business day in March. In exceptional circumstances applications received from prospective students later than this date may be given consideration. All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply for a renewal by filing the "Application for Financial Assistance" by the first business day in March.

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for conduct or academic standing that may be regarded as undesirable.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. No student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post residence fee. Part-time students are ineligible for fellowship awards, and are not ordinarily considered for scholarship awards. Teaching assistants who are part-time students may apply for scholarships. Priority in making awards is given to full-time students and teaching assistants.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full scholarships in the value of \$2,525 and partial scholarships are available. Scholarship students are liable for all but tuition charges.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. Fellowships carry stipends ranging up to \$2,500 in the graduate programs in the humanities and social sciences and up to \$4,000 in the graduate science programs. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless he is also awarded a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid a stipend in return for services rendered. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of his program spent as a student in fulfillment of degree and residence requirements.

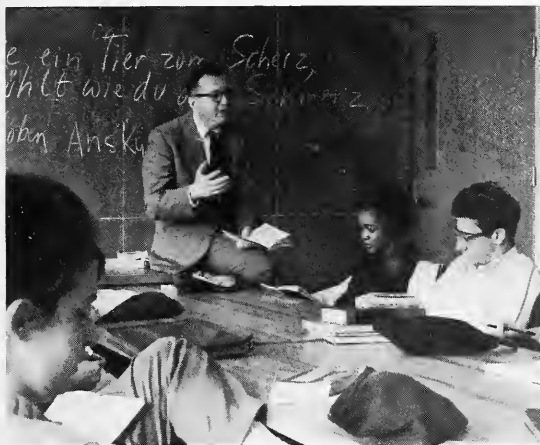
First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made on the authority of the President of the University by the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. A graduate student who is interested in being appointed as a teaching assistant should write or see his chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its Trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment. Approval is not normally granted in the case of full-time students receiving financial aid from the University.

Research Assistantships

Research assistantships, which sometimes carry stipends in excess of \$4,000, are available in the science areas. First-year graduate students are not nor-



mally eligible for appointment. Application should be made to the chairman of the Department or Committee administering the graduate program.

Loan Funds

Normally, graduate students are ineligible for loan funds until they have completed one semester in residence. Part-time and special students are not eligible for loan funds.

Resident Counsellorships

A limited number of positions are available for both married and unmarried men and women as counselors in the University residence halls. Remuneration includes room, board and a stipend of \$300 for the academic year. Interested students should apply to the Residence Office, Brandeis University, Waltham, Massachusetts 02154, no later than April 15. Appointments are made by the Residence Halls Office, on the recommendation of the Dean of the Graduate School, on or before June 15.

Office of Student Employment

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.

The on-campus, part-time student rate of pay is \$1.60–\$2.20 per hour. Students can expect to earn from \$200 to \$400 per year. Brandeis participates in the College Work-Study Program, which helps provide additional part-time and summer employment both on and off campus for students with financial need.

Areas of Study and Courses

All courses meet for three hours a week unless the course description indicates otherwise. The presence of "a" in the course number indicates a half course given in the Fall Term; "b" indicates a half course given in the Spring Term; "aR" indicates a course given in the Spring Term, "bR," a course given in the Fall Term which is identical with an "a" or "b" course of the same number given in the Fall and Spring Terms respectively; the use of "c" after a course number indicates that the course is given as a half course but meets throughout the year.

Half courses normally carry three credits and full courses six. Exceptions are noted under the individual course descriptions. Additional credits are given for laboratory hours, as indicated in the course descriptions.

The University reserves the right to make any necessary changes in the offerings without prior notice.

American Civilization

See History of American Civilization (page 93).

Anthropology

Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and field work, which are integral parts of the doctoral program.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Associate Professor ALEX WEINGROD, *Chairman*: Modernization. Peasant societies. Mediterranean.

*Professor HELEN CODERE: Method and theory. Economic anthropology. Primitive art. Africa.

Professor ROBERT A. MANNERS: Africa. The Caribbean. Modern cultures.

Associate Professor GEORGE L. COWGILL: Archaeology. Mathematical and computer methods in anthropology. Early civilizations, especially Mesoamerica.

Associate Professor ROBERT C. HUNT: Social anthropology. Modernization. Mesoamerica.

Associate Professor DAVID KAPLAN, *Graduate Student Adviser*: Economics. Method and theory. Mexico.

*Associate Professor BENSON SALER: Culture and personality. Primitive philosophies and religion. Formal analysis. Middle America. South America.

Assistant Professor JOAN BAMBERGER: Social anthropology. Ritual and myth. South America.

Assistant Professor DAVID JACOBSON: Social anthropology. Urban social organization. Africa.

Assistant Professor DAVID A. HERR: Physical anthropology. Primate studies.

Assistant Professor E. CRAIG MORRIS: Archaeology. South America.

Assistant Professor KARL M. I. REISMAN: Ethnography of communication. Linguistics. Caribbean.

Assistant Professor MARGUERITE S. ROBINSON: Social organization. South Asia.

Lecturer TIMOTHY ASCH: Film and tape in field research. Director, Center for Documentary Anthropology.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded upon successful completion of the following requirements: a minimum of twenty-four course credits, a high passing grade in a written qualifying examination in cultural anthropology, demonstration of proficiency in one foreign language, and a research paper based on a subject chosen by the student in consultation with his adviser.

* On Leave, 1970-71.

Doctor of Philosophy

Admission to the Program. Students who complete the first year qualifying examination at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may be admitted as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to pass the first-year qualifying examination, but, at the discretion of the department, this may be waived.

Program of Study. During their first year of residence, students are assigned to an adviser with whom they design their course and research program. Maximum flexibility is encouraged regarding the choice and timing of course work. Doctoral candidates must complete two years of residence at Brandeis, and a minimum of forty-eight hours of credits. Work done at other institutions may be counted as part of residence, as stipulated above and in the general rules of the Graduate School. At least thirty-six course credits must be in anthropology.

Students concentrating in cultural anthropology select areal and topical courses in their field of special interest. It is expected that students will attain a scholarly competence in at least one culture area and a topic of study. In addition, students are required to pass course examinations in statistics, physical anthropology, archaeology, and linguistics. The pre-doctoral examination in cultural anthropology, normally given following two or three years of residence, includes questions based on the student's particular areal and topical interests.

Students concentrating in archaeology must meet most of the same requirements as those concentrating in cultural anthropology. They will be expected to pass the first-year qualifying examination in cultural anthropology. The pre-doctoral examination will emphasize archaeology, but will also include other fields of anthropology.

Language Requirement. For Ph.D. candidates, the foreign language requirements include the satisfactory completion of the M. A. language examination and, in addition, a research paper based upon sources in a foreign language.

Summer Training Program. A selected group of students in the Ph.D. program will be invited each year to participate in a summer field training program under the direction of a faculty member. No student will be admitted to this program unless he has passed the qualifying examination in cultural anthropology.

Admission to Candidacy. A student is admitted to candidacy on satisfactory completion of the following: the general qualifying examination (where required); an examination in at least one foreign language; forty-eight hours of course credits; and a predoctoral examination which may cover any aspects of anthropology and tests the scope of the student's knowledge and his ability to integrate that knowledge.

Field Work for the Dissertation. As soon as possible after qualifying for candidacy for the Ph.D., the candidate will be expected to begin a full year of field research, which will ordinarily form the basis of his dissertation.

Dissertation and Defense. The degree of Ph.D. will be awarded only after successful defense of the dissertation.

Courses of Instruction

ANTHROPOLOGY 101b. Peoples and Cultures of the Caribbean

Formation and variation of Caribbean societies.

Mr. Reisman

ANTHROPOLOGY 102a. Anthropological Linguistics I

A general consideration of language in an anthropological context; language and culture; ethnography of speaking; speech communities and language contact; linguistic evidence in the study of prehistory.

Mr. Reisman

ANTHROPOLOGY 102b. Anthropological Linguistics II

Training in the recording and analysis of spoken languages with emphasis on non-Indo-European languages.

Mr. Reisman

*ANTHROPOLOGY 103b. Language and Culture

Language, thought, and meaning; speech differences within societies; processes of change; expressive language and poetics. Considerable attention will be given to the nature and role of Afro-American language and speech. No previous training in linguistics required.

ANTHROPOLOGY 104a. Verbal Arts

Proverbs, riddles, tales, drama and other verbal arts: their forms and contexts of use in traditional societies. As possible, original texts (with translations) will be used. Also some problems of the verbal arts in new nations and colonial areas.

Mr. Reisman

ANTHROPOLOGY 105a. Ritual, Myth and Symbol

A study of the social dynamics of ritual behavior, mythology and symbolism among primitive peoples.

Miss Bamberger

ANTHROPOLOGY 106b. Human Ecology

A study of the interrelationship between man and his environment. Emphasis will be given to prehistoric societies and contemporary primitive peoples.

Miss Bamberger and Mr. Morris

* Not to be given in 1970-71.

ANTHROPOLOGY 109b. Archaeological Methods

Basic archaeological procedures for reconnaissance, excavation, and analysis of data; some important aspects of primitive technology; a survey of recently developed instruments and techniques for finding, dating, and analyzing ancient materials; and problems in archaeological theory.

Laboratory exercises and field trips will give students practical experience with archaeological data. *Mr. Morris*

ANTHROPOLOGY 110a. Physical Anthropology

An introduction to the methods and materials of physical anthropology. A brief, intensive survey of non-primate and human evolution and fossil man. A study of human adaptation and the distribution of modern man in terms of morphology, genetics, geographical distribution, culture and environmental factors. *Mr. Horr*

ANTHROPOLOGY 111a. Primates

An intensive introduction to the study of non-human primates with emphasis on ethology and primate behavior. An enquiry into the evolution of human behavior from a primate matrix. *Mr. Horr*

ANTHROPOLOGY 121a. Quantitative Techniques in Anthropology

An introduction to statistical and other formal methods in anthropology, including set theory, probability, cross-cultural methodology, and computer techniques. *Mr. Cowgill*

*ANTHROPOLOGY 121b. Mathematical Methods in Anthropology

A continuation of Anthropology 121a, including more advanced statistical methods, and consideration in depth of anthropological applications.

Prerequisite: Anthropology 121a or the equivalent.

ANTHROPOLOGY 123a. Archaeology and Prehistory

A study of man's prehistoric cultures and the concepts and methods used by archaeologists in obtaining and interpreting data about these early cultures. *Mr. Morris*

ANTHROPOLOGY 124a. Civilizations of Mesoamerica

Development of Prehispanic culture of Mesoamerica from the earliest agricultural settlements through Olmec, Teotihuacan and classic Maya to the Aztec state. *Mr. Cowgill*

ANTHROPOLOGY 126a. Archaeology of the Prehistoric Mediterranean

See Mediterranean Studies 116a for description. *Mr. Todd*

*ANTHROPOLOGY 127a. Origins of Early Civilizations of the World

The development of the earliest food-producing communities and the rise of the earliest civilizations of the Old and New World, based on archaeological data. The emphasis is comparative and theoretical.

ANTHROPOLOGY 128b. Origins of African Cultures

African prehistory from the earliest cultures of the Lower Pleistocene to the beginnings of historic states. *Mr. Cowgill*

ANTHROPOLOGY 133a. Modern Africa

An examination of the indigenous organization of representative African societies in their ecological and historical settings. *Mr. Manners*

ANTHROPOLOGY 135b. Peoples and Cultures of India

An examination of institutions of representative Indian peoples and their relationship to the wider Indian society. *Mrs. Robinson*

***ANTHROPOLOGY 136a. Cultures of the Far East**

China, Japan, and Korea. Problems of evolution and development in a context of diverse influences.

***ANTHROPOLOGY 139b. Peoples and Cultures of the Mediterranean**

A comparative analysis of contemporary rural peoples in the Mediterranean region (Europe, North Africa, Middle East) and their relationships to urban settings.

***ANTHROPOLOGY 141b. The American Indian**

A survey of the peoples and cultures of aboriginal North America.

ANTHROPOLOGY 143b. Modern Culture of Middle America

Contemporary Indian and Ladino societies. *Mr. Hunt*

***ANTHROPOLOGY 144aR. The Cultures of Native South America**

The course will consist of an intensive reading of the important published sources on the peoples of Central Brazil and the Tropical Forest. The goal will be to reanalyze and compare a limited number of societies within the context of a "controlled comparison."

***ANTHROPOLOGY 144b. Folk and Peasant Cultures of South America**

The course will concentrate on rural communities of peasants, farmers, and rural wage earners in modern South America. Communities will be analyzed from the point of view of internal organization and relations to the nations of which they are a part.

***ANTHROPOLOGY 145b. The Development of Andean Civilization**

A developmental perspective on the Andean peoples from the initial occupation of the area to the present. Special emphasis will be placed on the Inca, and the fate of native traditions in the modern setting will be briefly examined.

***ANTHROPOLOGY 150a and b. Film and Tape in Field Research**

A seminar and practicum on the use and potential of audio-visual devices in field work.

ANTHROPOLOGY 151a. Social Organization

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis. *Mrs. Robinson*

° Not to be given in 1970-71.



ANTHROPOLOGY 151b. Social Organization

A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students.

Miss Bamberger

ANTHROPOLOGY 152b. Economic Anthropology

Economic institutions of non-industrial societies.

Mr. Kaplan

*ANTHROPOLOGY 153a. Primitive Art

An anthropological approach to the graphic and plastic art of Africa, Oceania and North America.

*ANTHROPOLOGY 153b. Ethnomusicology

See Music 180b.

*ANTHROPOLOGY 154aR. Primitive Religion

An exploration of belief and behavior in societies of non-literate peoples with reference to theories concerning the origins and functions of religion.

*ANTHROPOLOGY 155bR. Culture and Personality

An examination of the relationships between sociocultural systems and individual psychological processes with a critical evaluation of selected theories and studies bearing on this problem.

ANTHROPOLOGY 156b. Political Anthropology

Analysis of conflict, politics and government in tribal and peasant societies.

Mr. Jacobson

ANTHROPOLOGY 157b. Seminar on Urban Anthropology

Reading and research on selected problems in urban anthropology. This course will include field work in Greater Boston.

Prerequisite: Anthropology 158a or permission of instructor. *Mr. Jacobson*

ANTHROPOLOGY 158a. Urban Anthropology

Selected problems in the description and analysis of urban social organization.

Mr. Jacobson

*ANTHROPOLOGY 161b. Culture and Cognition

An exploration of formal techniques utilized by anthropologists in the attempt to discover and analyze systems of meaning and categorization.

*ANTHROPOLOGY 168a. A History of Sub-Sahara Africa

See History 185a for description.

*ANTHROPOLOGY 168b. Studies in Sub-Sahara African History

See History 185b for description.

ANTHROPOLOGY 170a. Comparative Agrarian Societies

Representative agrarian cultures will be dealt with in detail, with particular emphasis on the interrelationship between the city, the rural community and the state.
Messrs. Kaplan and Manners

ANTHROPOLOGY 175a. Pro-Seminar in Anthropological Method and Theory: I

Analysis of representative classics in anthropology.

Messrs. Hunt and Jacobson

ANTHROPOLOGY 175b. Pro-Seminar in Method and Theory in Cultural Anthropology: II

The development of anthropological theory, major present-day trends and their relation to problems of research.

Messrs. Kaplan and Manners

Primarily for Graduate Students

ANTHROPOLOGY 202b. Modernization: An Interdisciplinary Seminar

An exploration of selected problems and processes of modernization, with reference to both the "developed" and the "underdeveloped" states and the relationship between them.

Prerequisite: Consent of the instructor.

Messrs. Hindley and Weingrod

ANTHROPOLOGY 208a and b. Method and Theory in Ethnographic Film

See Theater Arts 252a and b for description.

Mr. Asch

ANTHROPOLOGY 210b. Special Topics in Primate Behavior

A seminar which will explore in depth some of the major problems in primate and human behavior. Anthropology 111a is highly recommended as background.

Mr. Horr

ANTHROPOLOGY 226. Readings in Research in Archaeology *Mr. Cowgill*

ANTHROPOLOGY 227. Readings in Research in Linguistics *Mr. Reisman*

ANTHROPOLOGY 228. Advanced Readings in Method and Theory

Mr. Kaplan

ANTHROPOLOGY 229. Guided Comparative and Historical Research

Mr. Weingrod

ANTHROPOLOGY 230. Readings and Research on Culture of Hunters and Gatherers

Miss Bamberger

* Not to be given in 1970-71.

ANTHROPOLOGY 235. Readings and Research in Latin American Cultures
Mr. Hunt

ANTHROPOLOGY 236. Readings and Research on East and South Asia
Mrs. Robinson

ANTHROPOLOGY 237. Readings and Research in African Cultures
Mr. Jacobson

*ANTHROPOLOGY 239. Readings and Research in North American Indian Cultures

ANTHROPOLOGY 240. Readings and Research in Cultures of the Caribbean
Mr. Reisman

ANTHROPOLOGY 300a. Seminar in Anthropological Field Work
Consideration of selected field studies.
Required of all graduate students. *Mr. Hunt*

ANTHROPOLOGY 302. Summer Research Training
Field work for three months during the summer under the supervision of a member of the staff. 3 credits. *Staff*

ANTHROPOLOGY 303b. Seminar in Inter-cultural Tensions
This course will consider some of the individual, social and socio-psychological consequences of cultural change associated with increasing contact between ethnic, tribal, occupational and class groups in contemporary cultures.
Open to graduate students from other departments with permission of instructor. *Mr. Hunt*

ANTHROPOLOGY 305. Anthropological Colloquium *Staff*

ANTHROPOLOGY 350a and b. Anthropological review *Staff*

ANTHROPOLOGY 400-410. Dissertation Research
Independent research for the Ph.D. degree.

- | | |
|----------------------------|---------------------------|
| *400. <i>Miss Codere</i> | 406. <i>Mr. Manners</i> |
| 401. <i>Mr. Cowgill</i> | 407. <i>Mr. Reisman</i> |
| 402. <i>Mr. Jacobson</i> | 408. <i>Mrs. Robinson</i> |
| 403. <i>Mr. Hunt</i> | *409. <i>Mr. Saler</i> |
| 404. <i>Mr. Horr</i> | 410. <i>Mr. Weingrod</i> |
| 405. <i>Miss Bamberger</i> | |

Biochemistry

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip the student with a broad understanding of the chemistry involved in biological processes and to train him to carry out

* Not to be given in 1970-71.

independent original research. Although the student will be primarily responsible for a comprehensive understanding of biochemical phenomena, he will be encouraged to acquaint himself with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include intermediary metabolism in normal and also tumor tissues, enzymology, immunochemistry, radiobiology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, photobiology, microbial metabolism, and organic biochemistry.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this area of study. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

Faculty

Professor LAWRENCE LEVINE, *Chairman*: Immunochemistry. Effect of antigenic conformation on the antigen-anti-body reaction.

Professor ROBERT H. ABELES: Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations.

Professor GERALD D. FASMAN: Conformation of biological macromolecules. Protein models, synthesis, conformational studies and biological properties of polyamino acids. Polyribonucleic acids conformational studies.

Professor LAWRENCE GROSSMAN: Nucleic acid metabolism in normal, tumor and virus-infected cells. Problems in biochemical replication. Action of pyrimidine analogs in chemotherapy.

Professor WILLIAM P. JENCKS: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salt and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor FARNSWORTH LOOMIS: Biochemistry of differentiation and growth with special reference to primitive animal systems. Role of $p\text{CO}_2$ in biological systems. Relationship of hydra to single cell systems in tissue culture.

Professor JOHN M. LOWENSTEIN: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Enzymatic and non-enzymatic reactions of nucleoside triphosphates.

Professor SERGE N. TIMASHEFF: Physical chemistry of proteins, in particular, structure in solution and interactions of proteins. Effects of amino acid substitution in genetic variants; macro-molecular properties of biological polymers.

Associate Professor DAVID M. FREIFELDER: Structure and function of DNA. Bacterial and phage genetics. Structure of bacterial episomes.

Associate Professor THOMAS C. HOLLOCHER, JR.: Free radicals in biological systems. Study of model free radical systems related to enzyme reactions. Biological oxidation. Nuclear magnetic resonance.

Adjunct Associate Professor JULIAN KANFER: Lipid chemistry.

Adjunct Associate Professor FARAHE MALOOF: Biochemical pharmacology. Biochemistry of the thyroid. Effects of I^{131} irradiation on thyroid tissue.

Associate Professor WILLIAM T. MURAKAMI: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.

Associate Professor MORRIS SOODAK: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.

Associate Professor HELEN VAN VUNAKIS: Protein structure of enzymes and viruses. Mechanisms of viral infectivity. Photodynamic action of dyes on nucleic acids. Conversion of zymogens to enzymes.

Adjunct Assistant Professor DWIGHT ROBINSON: Protein denaturation. The mechanisms of reactions of acyl compounds.

Research Assistant Professor SUSAN E. LEEMAN: Neurosecretion. The role of the hypothalamus in the regulation of autonomic function and in the control of anterior pituitary secretion.

Degree Requirements

Doctor of Philosophy

Program of Study. Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, history of biochemistry, physical biochemistry and radiobiology, biochemical research problems, and at least four of the biochemistry seminars.

Language Requirement. A reading knowledge of German is required. This language requirement must be completed satisfactorily prior to the oral qualifying examination.

Qualifying and Cumulative Examination. An oral qualifying examination must be taken generally at the end of the first year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization and one will be an original proposition put forth by the student for a research problem in his area of interest (this is not necessarily a problem upon which he will carry out research). In addition, the student will have an opportunity to demonstrate his general knowledge of biochemistry on this and two later occasions. This general knowledge outside his own field of specialization must be demonstrated to the satisfaction of an advisory committee of four department faculty members.

Admission to Candidacy. The qualifying examination must be passed at a level satisfactory for this degree. Admission to candidacy usually takes place at the end of the second year of study.

Dissertation and Defense. At some time before the second semester of their third year, students will present to a committee of three members of the department a summary of their research accomplished to date, including the most significant experimental data, and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Master's or Doctor of Philosophy degree.

A dissertation will be required which summarizes the results of an original investigation of an approved subject and demonstrates the competence of the candidate in independent research.

Courses of Instruction

BIOCHEMISTRY 100a. Introductory Biochemistry

Chemistry and metabolism of compounds of biological importance, introduction to enzyme reactions, energy metabolism, cellular function and differentiation.

Prerequisite: Chemistry 25a and b.

Mr. Loomis and Staff

BIOCHEMISTRY 101. Advanced Biochemistry

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids.

Prerequisites: Chemistry 25a and b, Biochemistry 100a or their equivalent. Some background in elementary physical chemistry is recommended but not required.

Mr. Abeles and Staff

***BIOCHEMISTRY 103a. History of Biochemistry**

A discussion of significant discoveries which have led to present-day concepts of biochemistry.

Prerequisite: Biochemistry 100a.

BIOCHEMISTRY 200. Biochemistry Techniques

Students registered for this course will participate for a period of approximately six weeks in several research programs being conducted by the staff members.

Prerequisite: Biochemistry 100a (may be taken concurrently) and consent of the department.

Miss Van Vunakis

BIOCHEMISTRY 201. Physical Biochemistry

Measurements of free energy; kinetics; discussion of physical methods: molecular weight measurements, electrophoresis, spectroscopic techniques, magnetic methods.

Prerequisite: Biochemistry 100a; Physical Chemistry.

Mr. Timasheff and Staff

BIOCHEMISTRY 202b. Chemistry of Enzyme-Catalyzed Reactions

A discussion of the chemistry of certain enzyme-catalyzed reactions compared to the corresponding uncatalyzed or chemically catalyzed reactions. Some consideration of the mechanisms through which enzymes may exert their catalytic effects.

Prerequisites: Chemistry 131 and biochemistry 101, or equivalent, taken previously or concurrently.

Mr. Jencks

***BIOCHEMISTRY 203a. Molecular Biology**

***BIOCHEMISTRY 204b. Metabolism in Relation to Function**

This course is to introduce the student to physiology. Circulation, digestion, excretion, excitation and homeostatic control mechanisms will be discussed. Where possible, physiological function will be related to cellular metabolism.

Prerequisite: Biochemistry 100a.

***BIOCHEMISTRY 205a. Biochemical Genetics**

Recent advances in the chemistry of inheritance will be discussed with emphasis on recombination, transformation and transduction phenomena in microorganisms. The problem of gene function, and enzyme formation and function, will be considered together with the contribution of microbial and animal mutants to the study of metabolic pathways.

Prerequisite: Biochemistry 100a (may be taken concurrently).

***BIOCHEMISTRY 206a. The Nucleic Acids**

Chemical and physical properties of the nucleic acids and monomeric units will be examined. Current chemical and enzymatic polymerization pathways and the biochemical roles of nucleic acids in protein synthesis, virus replication and genetic coding will be discussed.

Prerequisite: Biochemistry 100a, 101a and b.

***BIOCHEMISTRY 207b. Immunochemistry**

Mode and mechanism of antigen-antibody interaction; application of immunochemical methods to the estimation and characterization of proteins, polysaccharides, nucleic acids and natural proteins with biological activity such as enzymes and hormones.

***BIOCHEMISTRY 208b. Metabolic Regulation**

Regulation of rates of enzyme reactions, regulation of enzyme levels, rate of determining steps in metabolic pathways, control phenomena such as the Pasteur effect and the regulation of fat synthesis.

BIOCHEMISTRY 210a. Protein Chemistry

The following will be discussed: chemical and physical properties of proteins, peptides, and amino acids; methods of determination of molecular weight, purity, and structure and isolation techniques. *Miss Van Vunakis and Mr. Fasman*

Prerequisite: Biochemistry 100a and one year of physical chemistry.

***BIOCHEMISTRY 212b. Neurochemistry**

The special chemistry and biochemistry of nervous tissue, both central and peripheral, will be discussed. Emphasis will be placed on lipid chemistry as well as on nucleic acid and protein synthesis in the nervous system. Nerve conduction; vision; the effects of neurotropic agents on the enzymatic mechanisms of the brain will be presented.

Prerequisite: Biochemistry 100a (may be taken concurrently).

Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

BIOCHEMISTRY 215a. Single Lipid Metabolism *Mr. Kanfer*

***BIOCHEMISTRY 216a. Biochemical Aspects of Differentiation and Growth**

***BIOCHEMISTRY 217a. The Nucleic Acids**

***BIOCHEMISTRY 218a. Biochemical Studies with Mammalian Viruses and Cultured Cells**

***BIOCHEMISTRY 219b. Mechanism of Enzyme Action**

***BIOCHEMISTRY 220a. Problems in Biosynthesis**

BIOCHEMISTRY 221b. Metabolic Regulation *Mr. Lowenstein*

BIOCHEMISTRY 222a. Topics in Biological Oxidations and Phosphorylation *Mr. Hollocher*

***BIOCHEMISTRY 223a. Structure, Metabolism, and Function of Hormones**

• Not to be given in 1970-71.

BIOCHEMISTRY 224b. Selected Topics in Physiology

Miss Leeman

*BIOCHEMISTRY 225b. Genetics

*BIOCHEMISTRY 226b. Neurosciences

*BIOCHEMISTRY 227a. Selected Topics in Protein Chemistry

BIOCHEMISTRY 401–414. Biochemical Research Problems

Independent research for the Ph.D. degree.

401. *Mr. Jencks*

408. *Mr. Grossman*

402. *Mr. Levine*

409. *Mrs. Leeman*

403. *Mr. Loomis*

410. *Mr. Soodak*

404. *Mr. Timasheff*

411. *Miss Van Vunakis*

405. *Mr. Abeles*

412. *Mr. Freifelder*

406. *Mr. Fasman*

413. *Mr. Hollocher*

407. *Mr. Lowenstein*

414. *Mr. Murakami*

Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, where recent publications are discussed. Colloquia are general meetings of the department in which both speakers from the department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the department.

Biology

Objectives

The graduate program in biology is designed to give the student an understanding of the fundamental nature of living processes, and to train him to undertake original research.

The department rarely admits a graduate student who desires a Master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include

• Not to be given in 1970–71.

courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, each graduate student will report to the temporary graduate student adviser who will assist the student with his formal entry into the department and later with his program.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor HERMAN T. EPSTEIN, *Chairman*: Radiation biology. Virus genetics.

Professor MARTIN GIBBS, *Graduate Adviser*: Photosynthesis and plant physiology.

Professor HUGH HUXLEY, *Visiting Professor of Biology and Biomedical Science*.

Professor ALBERT KELNER: Genetics. Microbial genetics. Radiation biology.

Professor JEROME A. SCHIFF: Plant biochemistry and physiology. Intracellular development. Sulphur metabolism.

Professor MAURICE SUSSMAN: Microbiology. Cellular differentiation. Microbial genetics.

Professor ANDREW G. SZENT-GYORGYI: Chemistry of muscle contraction. General physiology.

Professor EDGAR ZWILLING: Vertebrate development. Tissue interactions.

Associate Professor CHANDLER M. FULTON: Invertebrate development. Cellular differentiation.



** Associate Professor ATTILA O. KLEIN: Plant development and metabolism.
 Assistant Professor DAVID H. GILLESPIE: Microbial and molecular genetics.

Assistant Professor HERBERT OBERLANDER: Endocrinology and post-embryonic development of insects.

Assistant Professor GJERDING OLSEN: Animal physiology. Endocrinology.

Assistant Professor RAYMOND E. STEPHENS: Chemistry of cell division.
 Biological motility.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of twenty-four semester hours of approved study.

** On Leave, Fall Term, 1970-71.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances and only with the approval of the department staff.

Language requirements. All candidates are required to demonstrate a reading knowledge of French or German, or another foreign language acceptable to the department. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101b, 200a and b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language requirement. A reading knowledge of French and German, or another language acceptable to the department, is required. At least one of these requirements must be met before the student completes the first year of graduate study and before he is admitted to candidacy.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should

be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed at least one foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his work and its significance during an examination in defense of the dissertation.

Courses of Instruction

*BIOLOGY 101b. Comparative Physiology of Animals

*BIOLOGY 103a. Cell Structure and Function

BIOLOGY 108a. Vertebrate Endocrinology

A survey of the natures and models of action of vertebrate hormones. The course will begin with a study of the direct effects of specific hormones and conclude with the analyses of the integrative and coordinative actions of the tropic hormones, the responding secretory glands and the target tissues. For the mandatory laboratory considerable manual dexterity is required. Each student will present the results of an independent research project near the conclusion of the course.

Three classroom and four laboratory hours a week. *5 credits.*

Prerequisites: Biology 10, Chemistry 25b.

Mr. Olsen and Miss Leeman

BIOLOGY 124b. Virology

Biology of plant, animal and bacterial viruses.

Prerequisite: Biology 30a or the equivalent.

Mr. Epstein

*BIOLOGY 131b. Problems in Animal Morphogenesis

* Not to be given in 1970-71.

*BIOLOGY 150b. Physical and Mathematical Bases of Molecular Biology

BIOLOGY 200a. Gene Structure and Function

The development of the gene concept. Contemporary investigations of the nature of genetic material and its involvement in cell structure and function.

Prerequisite: Biology 30a.

Mr. Fulton

BIOLOGY 200b. The Cellular Basis of Development

Phenomic variation and interaction at the cellular level will be considered. Developmental events in microbial cultures, morphogenetically complex Protista, Metazoa and Metaphyta will be analyzed in terms of the cellular mechanisms involved.

Three classroom hours.

Mr. Sussman

*BIOLOGY 202a. Gene Structure and Function

*BIOLOGY 245a. Selected Topics in Plant Metabolism

BIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Three classroom hours a week. 2 credits.

Mr. Schiff

Courses in Research

BIOLOGY 300a and b. Biological Research

Primarily for the first year student with the purposes of introducing him to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Credits to be arranged.

Staff

BIOLOGY 400. Biophysics of Microorganisms

Laboratory hours and credits to be arranged.

Laboratory fee: \$25.

Mr. Epstein

BIOLOGY 401. Genetics and Microbiology

Laboratory hours and credits to be arranged.

Laboratory fee: \$25.

Mr. Kelner

*BIOLOGY 402. Population Genetics and Mathematical Genetics

BIOLOGY 403. Microbial Genetics

Laboratory hours and credits to be arranged.

Laboratory fee: \$25.

Mr. Gillespie

* Not to be given in 1970-71.

- BIOLOGY 404. Vertebrate Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Olsen*
- BIOLOGY 405. Invertebrate Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Fulton*
- BIOLOGY 406. Plant Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Schiff*
- BIOLOGY 407. Insect Endocrinology and Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Oberlander*
- BIOLOGY 408. Differentiation and Genetics
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Sussman*
- BIOLOGY 409. Vertebrate Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Zwilling*
- BIOLOGY 410. Plant Development
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Klein*
- BIOLOGY 411. Cytology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Stephens*
- BIOLOGY 412. Plant Metabolism
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Gibbs*
- BIOLOGY 413. General Physiology
Laboratory hours and credits to be arranged.
Laboratory fee: \$25. *Mr. Szent-Gyorgyi*

Biology Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of staff members. Students, depending upon their individual needs, may be required to attend.

Biophysics

Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to give the student a broad understanding

of the physico-chemical nature of living processes and to train him to carry out independent research. In addition to basic courses in cellular biology, the student will be expected to obtain a broad background in the supporting disciplines of biochemistry, biology, chemistry, physics, and mathematics. After completion of this program, the student's remaining course work will be in an area of biophysics in which a faculty member is doing research. Some areas in which research is now being actively pursued are photobiology, radiobiology, virus reproduction and muscle contraction.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to applicants for admission to this area of study. Applicants are also required to take the Graduate Record Examination. The student's undergraduate program should, ideally, include organic and physical chemistry, atomic and nuclear physics, differential equations, and courses in cellular biology. Inasmuch as most students will be deficient in some respects, it is expected that deficiencies may be made up by taking the appropriate courses while in Graduate School. If a petition is approved, the successful completion of some of these courses may be credited as part of the graduate program. On being admitted to study in biophysics, the student will be assigned to a member of the Biophysics Committee, who will advise the student on a program of courses. This program should be submitted for approval to the committee by the beginning of the second term of residence.

Faculty

Professor HENRY LINSCHITZ (Chemistry), *Chairman*; Professors EUGENE P. GROSS (Physics), ANDREW G. SZENT-GYORGI (Biology), SERGE N. TIMASHEFF (Biochemistry); Associate Professor THOMAS C. HOLLOCHER (Biochemistry).

Degree Requirements

Doctor of Philosophy

Program of Study. The following are five areas in which competency at more than a minimal level is expected of a candidate for a Ph.D. in Biophysics:

1. Biology through cell structure and function, genetics, development, and molecular biology.
2. Classical physics and modern physics through the basic ideas of quantum mechanics. Computer programming.

3. Organic chemistry and physical chemistry including thermodynamics.
4. Biochemistry including enzyme mechanisms.
5. Mathematics through elementary differential equations.

Language Requirements. A reading knowledge of German and French is required. Russian may be substituted for one of these languages if the advisory committee determines that it is useful for a student in his particular field of research.

Qualifying Examination. A student should have completed the program of study not later than the end of his second year in residence so that he may be able to take a qualifying examination covering this material.

Dissertation and Defense. Upon passing this examination, the student will select a dissertation supervisor and formally initiate research and course study in the research area of his supervisor. Additional credits may be taken from among graduate courses and seminars, as approved by the student's research supervisor and advisory committee. This committee will be appointed by the dissertation supervisor, subject to the approval of the Biophysics Committee. When the student and the dissertation supervisor have agreed on the research project, a brief description of the project must be filed with each of the members of the advisory committee.

After completing the research and the dissertation, the candidate will present and discuss the results and significance of his work during an examination in defense of his dissertation.

Courses of Instruction

BIOPHYSICS 300a and b. Biophysical Techniques

All entering students normally register for this course and will thereby participate for periods of about ten weeks in the research programs of each of five or six staff members selected from the departments of Biochemistry, Biology, Chemistry and Physics.

Staff

Chemistry

Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry. All students will be required to demonstrate

° Not to be given in 1970-71.



knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, this to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine whether the student will be required to make up deficiencies in preparation. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study.

Faculty

Professor SAUL G. COHEN, *Chairman*: Chemistry of free radicals; organic photochemistry; specificity and mechanism of reactions of enzymes.

Professor PAUL B. DORAIN: Electron paramagnetic resonance; exchange interactions and optical spectra of crystalline materials.

Professor SIDNEY GOLDEN: Quantum statistical theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation.

*Professor ERNEST GRUNWALD: Ultra-fast proton transfer steps in acid base reactions; lifetimes of hydrogen-bonded complexes in solution; enthalpy, entropy and heat capacity changes for polar reactions in solution.

Professor JAMES B. HENDRICKSON: Synthesis of natural products; chemical plant phylogeny; stereochemistry and molecular geometry; development of new synthetic reactions.

Professor HENRY LINSCHITZ: Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution and properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.

Professor MYRON ROSENBLUM, (*Graduate Student Adviser*): Reaction mechanisms; molecular rearrangements; organometallic chemistry of the transition elements.

Professor ROBERT STEVENSON: Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.

Associate Professor MICHAEL HENCHMAN, (*Graduate Student Adviser*): Gas kinetics under "single collision" conditions; dynamics of molecular collision processes.

Associate Professor PETER C. JORDAN: Statistical mechanical theory of fluids; non-equilibrium statistical mechanics and thermodynamics; quantum chemistry.

Associate Professor KENNETH KUSTIN: Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; enzyme kinetics.

Associate Professor COLIN STEEL: Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

* On Leave, 1970-71.

Associate Professor THOMAS R. TUTTLE, JR.: Electron distribution in ion radicals by electron spin-resonance; molecular motions in solutions; properties of metal solutions in ammonia and other solvents.

Assistant Professor CARLOS R. ABELEDO: Mossbauer effect spectroscopy of iron proteins and coordination compounds.

Assistant Professor WILLIAM R. VITALE: Ned carbo- and heterocyclic-conjugated molecules; chemistry of unsaturated carbonyl compounds; NMR spectral analysis; synthetic and theoretical organic chemistry.

Degree Requirements

Entering students may be admitted to either the Master's or the Doctoral program.

All candidates for advanced degrees are required to meet the following requirements:

Qualifying Examinations. Each student is required to demonstrate satisfactory knowledge of undergraduate chemistry. This is shown by his performance in three qualifying examinations, one each in organic/analytical, organic and physical chemistry during his first year. These examinations are set twice a year, in September and February.

Language Requirements. Each student is obliged to demonstrate a useful reading knowledge of scientific German.

Seminar. Each student in residence is required to attend and participate in the seminar in his chosen area of concentration.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

Program of Study. Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The program will include laboratory work. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as a perspective of other areas.

Residence Requirements. The minimum residence requirement for the M.A. degree is one year.

Doctor of Philosophy

Program of Study. A balanced program of study will be prepared jointly by the student and the Departmental Graduate Studies Committee. This will normally include a basic core of course work in his area of interest and later more specialized courses appropriate to it. It is expected that doctoral students will choose a research adviser during the first year, normally in February.

A student who satisfactorily completes his first year of study in the Doctoral program qualifies for the Master's degree.

Admission to Candidacy. A student is recommended for admission to candidacy for the doctoral degree upon certification by his thesis adviser and the Graduate Studies Committee that he has passed the qualifying and language examinations and has made satisfactory progress in his program of study and the final Ph.D. examinations.

Final Examinations. The graduate student must demonstrate his proficiency by taking final examinations in his major field, organic, physical-organic, physical, or inorganic chemistry. In organic chemistry and in physical-organic chemistry, these examinations are administered twice a year and are based on assigned readings. Students must pass three of these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition, and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he takes a written examination on one proposition, and is examined orally on his proposed research project and the remaining proposition.

Residence Requirements. The minimum residence requirements for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability, and effectiveness of expression. An oral defense of the dissertation will be held.

Courses of Instruction

CHEMISTRY 110b. Analytical Chemistry

Principles and techniques involved in modern chemical analysis. Application of modern methods of chemical analysis to problems of theoretical and practical interest. Problems may include analysis for impurities or pollutants in water or air, or for additives in foodstuffs.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Two lectures and six laboratory hours a week.

Mr. Tuttle

CHEMISTRY 121a. Inorganic Chemistry I

Introduction to the principles of chemical binding; valence theory, periodic properties, molecular structures. Application chiefly to the chemistry of the lighter and non-metallic elements.

Inorganic synthesis and analysis; synthetic techniques include vacuum line, high temperature, non-aqueous and electrochemical preparations. Instrumental methods of analysis.

Graduate students may take the lectures of this course without the laboratory.

Prerequisite: Chemistry 41 or the equivalent.

Three lecture hours a week, 4 *credits*; six laboratory hours a week, 2 *credits*.

Laboratory fee: \$15.

Mr. Abeledo

*CHEMISTRY 122b. Inorganic Chemistry II

A continuation of the lecture part of Chemistry 121a, dealing with the transition metal, rare earth and actinide elements.

Prerequisite: Chemistry 121a or the equivalent.

*CHEMISTRY 123b. Nuclear Chemistry

Nuclear reactions, radioactive decay, interaction of radiation and matter, chemical applications of isotopic tracers, Mössbauer Spectroscopy, Positronium Chemistry and Cosmochemistry.

Prerequisite: Chemistry 41 or the equivalent.

CHEMISTRY 130a. Advanced Organic Chemistry: Structure

Introduction to group theory and its application to molecular orbital theory and spectroscopy. Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

Prerequisite: Chemistry 25 or the equivalent.

Mr. Rosenblum

CHEMISTRY 131a. Advanced Organic Chemistry: Mechanisms

Structure, reactivity, and mechanism.

Prerequisite: Satisfactory grades in undergraduate courses in organic and physical chemistry.

Mr. Cohen

CHEMISTRY 132b. Advanced Organic Chemistry: Synthesis

A survey of several organic reactions of theoretical and synthetic interest including a discussion of their application, scope, specificity and mechanism.

Prerequisite: Satisfactory grade in Chemistry 25 or the equivalent.

Mr. Hendrickson

CHEMISTRY 141a and b. Advanced Physical Chemistry I

Classical, statistical, irreversible thermodynamics and chemical kinetics. Properties of real systems: gases, phase stability, chemical equilibrium and solutions. Statistical equilibrium, ensembles and fluctuations. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Rate laws and approach to equilibrium; scattering and energy transfer. Gas and solution kinetics. Surface reactions.

Prerequisite: Chemistry 41 or the equivalent.

Mr. Linschitz, 1st sem.

Mr. Kustin, 2nd sem.

CHEMISTRY 142b. Advanced Physical Chemistry II

Quantum mechanics: waves and wave packets, operator methods, Schrödinger's equation, simple model systems, angular momenta, perturbation theory and variational principle.

Prerequisite: Chemistry 41 or the equivalent.

Mr. Golden

* Not to be given in 1970-71.

CHEMISTRY 143a. Advanced Physical Chemistry II

A continuation of Chemistry 142b. Quantum Chemistry: spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics.

Prerequisite: Chemistry 142b or the equivalent.

Mr. Jordan

CHEMISTRY 144a. Structure and Spectroscopy

Interaction of radiation with matter and its relevance to molecular structure. Topics will be selected from: X-ray and electron diffraction; microwave, nmr, infra-red, visible and ultraviolet absorption; molecular beam and mass spectrometry.

Mr. Tuttle

CHEMISTRY 200. Advanced Chemistry Laboratory

Staff

CHEMISTRY 220c. Inorganic Chemistry Seminar

A seminar course. Required of graduate students in inorganic chemistry who must audit this course each year.

Mr. Abeledo and Mrs. Dudek

***CHEMISTRY 221a. Advanced Inorganic Chemistry I**

Inorganic reaction mechanisms: Substitution, exchange, polymerization, redox, hydrolytic and solvolytic reactions; inorganic stereochemistry.

Prerequisite: Chemistry 141a and b.

CHEMISTRY 222b. Advanced Inorganic Chemistry II

Theoretical inorganic chemistry: Atomic structure and the application of group theory to inorganic compounds, particularly the transition metals; ligand field theory.

Prerequisite: Chemistry 142b and 143a.

Chemistry 221 and Chemistry 222 are given in alternate years.

Mr. Dorain

***CHEMISTRY 229b. Special Topics in Inorganic Chemistry**

The content will depend on the interests of the instructor.

***CHEMISTRY 230b. Advanced Organic Chemistry: Mechanisms**

Kinetics, stereochemistry and mechanisms of organic reactions.

Prerequisite: Satisfactory grade in Chemistry 130a or 131 or 132a.

CHEMISTRY 231c. Organic Chemistry Seminar

Required of graduate students in organic chemistry who must audit this course each year.

Messrs. Hendrickson, Rosenblum and Stevenson

***CHEMISTRY 232b. Chemistry of Heterocyclic Compounds**

A systematic survey of the principal oxygen, nitrogen and sulfur heterocycles of five and six membered and fused ring systems, including their synthesis, chemical reactions and aromatic character.

Prerequisite: Satisfactory grade in Chemistry 131 or the equivalent.

***CHEMISTRY 234b. Chemistry of Organometallic Compounds**

A survey of the complexes formed by transition metals with olefins, acetylenes and aromatic ligands; their preparation, properties and chemical reactions.

Prerequisite: Chemistry 130a or the equivalent.

• Not to be given in 1970-71.

CHEMISTRY 235b. Special Topics in Organic Chemistry

The content will depend on the interests of the instructor.

Prerequisite: Chemistry 130a, or 131, or 132a or consent of the instructor.

Mr. Stevenson

***CHEMISTRY 237b. The Chemistry of Natural Products**

Isolation, structure elucidation, degradation and synthesis of selected classes of natural products.

Prerequisite: Chemistry 130a, or 131, or 132a.

CHEMISTRY 240c. Physical-Organic Chemistry Seminar

Required of graduate students in physical-organic chemistry who must audit this course each year.

Messrs. Steele and Vitale

CHEMISTRY 241c. Physical Chemistry Seminar

Required of graduate students in physical chemistry who must audit this course each year.

Mr. Henchman

***CHEMISTRY 243b. Statistical Thermodynamics**

Elementary statistical mechanics of systems in equilibrium; Boltzmann, Fermi-Dirac and Bose-Einstein statistics; microcanonical, canonical and grand canonical ensembles; applications to thermodynamic systems.

CHEMISTRY 244a. Special Topics in Physical Chemistry**CHEMISTRY 244b. Special Topics in Physical Chemistry*****CHEMISTRY 245a. Physical Organic Chemistry**

A quantitative discussion of rates and equilibria of organic reactions.

***CHEMISTRY 248a. Advanced Quantum Chemistry**

Selected aspects of quantum mechanics of molecular systems.

Prerequisite: Chemistry 142 or the equivalent.

CHEMISTRY COLLOQUIUM

Lectures by faculty and invited speakers. Required of all graduate students.
Non-credit.

Courses in Research**CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry**

Reaction mechanisms; photochemistry; enzyme reactions; free radicals; radiation chemistry.

Mr. Cohen

CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, lignans. *Mr. Stevenson*

CHEMISTRY 402. Organic Chemistry

New carbo- and heterocyclic-conjugated molecules; chemistry of unsaturated carbonyl compounds; NMR spectral analysis; synthetic and theoretical organic chemistry.

Mr. Vitale

* Not to be given in 1970-71.

CHEMISTRY 403. Organic Chemistry

Non-benzenoid aromatics; molecular rearrangements; reaction mechanisms; organometallics. *Mr. Rosenblum*

CHEMISTRY 404. Organic Chemistry

Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions. *Mr. Hendrickson*

CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions. *Mr. Golden*

CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes. *Mr. Linschitz*

CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; optical spectra; solid state chemistry. *Mr. Dorain*

CHEMISTRY 408. Physical Chemistry

Electron spin resonance; structure of free radicals; diffusion in liquid solutions; chemistry of electrolytic solutions. *Mr. Tuttle*

CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions including enzyme catalysis by the temperature-jump and other relaxation techniques. *Mr. Kustin*

CHEMISTRY 410. Physical and Inorganic Chemistry

Mossbauer effect spectroscopy of iron proteins and coordination compounds; magnetic properties of transition metal compounds. *Mr. Abeledo*

CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions. *Mr. Steel*

CHEMISTRY 412. Physical and Physical Organic Chemistry

Ultra-fast proton transfer steps in acid base reactions; enthalpy, entropy and heat capacity changes for polar reactions; lifetimes of hydrogen-bonded complexes in solution. *Mr. Grunwald*

CHEMISTRY 413. Physical Chemistry

Theory of fluids; theory of non-equilibrium processes; quantum chemistry. *Mr. Jordan*

CHEMISTRY 414. Physical Chemistry

Cross-sections, dynamics and lifetimes of ion-neutral collision processes in the gas phase using beam techniques; charge transfer; elastic and inelastic scattering. *Mr. Henchman*

Comparative History

Objectives

The graduate program in Comparative History, leading to the degree of Doctor of Philosophy in History, has been designed to train professional scholars and teachers of European history. Comparative history is the conceptualization and study of the past according to political, social, economic, cultural and psychological categories that transcend traditional period and national divisions.

A small select student body will work in close cooperation with the faculty. All teaching will be done in small seminars and tutorials. Individual programs of study will be developed from the beginning of the students' graduate work in comparative history to prepare them for their qualifying examination and to guide them toward their dissertation research.

The program will concentrate on the comparative history of Western Europe, but students will be strongly encouraged to examine the patterns of European history in comparison with those of American civilization, Eastern Europe, Latin America, Africa and the Near and Far East.

Students in the program will be trained in two fields: one a very broad chronological field, the other a topical or category field. The three chronological fields or periods are: (1) medieval Europe 300–1500, (2) early modern 1400–1815, (3) modern Europe 1750–present. Students will elect one of these periods and will be allowed to concentrate on more narrowly defined eras and areas within the chosen field.

The student will choose, under guidance, a category of comparative historical inquiry and will be required to study it throughout the whole of European history and, within practical limits, in other civilizations.

It is expected that the doctorate will be earned within four years from entering the program. The maximum time allowed will be six years.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Only doctoral candidates will be accepted. Students who have had a sound preparation in history and the social sciences and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the social sciences or in comparative literature may also apply. Applicants should submit a sample of written work, preferably in European history.



Faculty

Professor EUGENE C. BLACK, *Chairman*: Modern history. Political and social institutions.

*Professor GEOFFREY BARRACLOUGH: Modern and medieval history. Political institutions.

Professor DAVID S. BERKOWITZ: Early modern history. Bibliography. The Reformation.

*Professor RUDOLPH BINION: Modern history. Culture and thought. Biography.

Professor DAVID H. FISCHER: Modern history. Social institutions.

Visiting Professor FREDERIC C. LANE: Early modern and medieval history. Economic institutions.

Visiting Professor ALEXANDER C. PARKER (Fall Term): Modern history. Political institutions.

Visiting Professor JOHN WEISS: Modern history. Political and social institutions.

Associate Professor JOHN P. DEMOS: Early modern history. Social institutions.

Associate Professor MILTON I. VANGER: Modern Latin American history. Political institutions.

Assistant Professor GERALD L. SOLIDAY: Early modern history. Social institutions.

Lecturer MARSHALL S. SHATZ: Modern history. Eastern Europe. Political and social institutions.

* On Leave, 1970-71.

Degree Requirements

Master of Arts

An M.A. degree in History will be awarded those students who have satisfactorily completed one year of residence at full-time, fulfilled the language requirement, and have passed a qualifying examination at the Master's level.

Doctor of Philosophy

Each student will be assigned to a member of the faculty who will be his period supervisor. In addition, he will work independently with other assigned faculty members who will help him define his category field.

Program of Study. During the first two years in the program, students will take four courses each term, divided between seminars, and supervised independent study or reading courses.

The third year in the program will, when feasible, be spent abroad pursuing research for the dissertation. Arrangements will be made for conferences with foreign scholars who can advise on the subject of the research.

Language Requirement. The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass at least one language examination during his first month in the program, the second one no later than the end of the second semester. Language requirements are:

Medieval: French, German, Latin

Early Modern and Modern: French and German

Students with any language deficiency must remedy it during the summer prior to admission. The Latin examination will presume the equivalent of two years of college work; French and German require a capacity to read standard historical prose and render an accurate literal translation with the aid of a dictionary.

Qualifying Examination. The student will normally take the qualifying examination at the end of the second year of study. He will be examined on his period, his category, and his proposed dissertation topic.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed course and residence requirements, has demonstrated proficiency in the required foreign languages, has passed the qualifying examination, and his dissertation topic has been approved by the faculty of the program.

Dissertation and Defense. In the term preceding the qualifying examination, the student will define his dissertation topic under the direction of a first and second sponsor and will begin his research. When the dissertation has been accepted by the student's dissertation committee, the candidate will defend it at a final oral examination.

Courses of Instruction

Seminars

COMPARATIVE HISTORY 201a. Introduction to Comparative History

Introduction to the methods, concepts and literature of comparative history and the professional study of history in general.

Required for all first year students.

Mr. Black and Staff

COMPARATIVE HISTORY 229a. Venice and the Beginnings of Capitalism

An introduction to the study of late medieval and early modern capitalistic institutions.

Mr. Lane

COMPARATIVE HISTORY 230a and b. Revolts and Revolutions in Seventeenth Century Europe (Pro-Seminar)

An examination of various uprisings as a means of analyzing seventeenth century social structure comparatively. The first semester will be devoted to English society before and during the revolution of 1640–60, and the second will take up revolts on the continent, especially those in France and Spain. The course will be divisible, though students interested in comparative social and political history should take it as a full-year course.

Mr. Soliday

COMPARATIVE HISTORY 250b. The Age of the Democratic Revolution

Political, social and economic changes in the late eighteenth and early nineteenth centuries in Western Europe and America. An examination of the literature and major research problems.

Messrs. Black and Fischer

COMPARATIVE HISTORY 260a. Nineteenth Century Industrial Society

Urbanization and industrialization as categories in comparative history.

Mr. Black

*COMPARATIVE HISTORY 270a. Nineteenth Century Cultural History

Readings, research and discussion on European culture 1848–1890.

*COMPARATIVE HISTORY 279b. European Socialism since Babeuf

European socialist thought viewed against the changing historical background.

COMPARATIVE HISTORY 281b. Seminar on Fascism

Twentieth century totalitarianism with emphasis upon European fascism.

Mr. Weiss

COMPARATIVE HISTORY 285a. The Coming of World War II

An examination of the events leading up to World War II with emphasis on British and French policy.

Mr. Parker

*COMPARATIVE HISTORY 285b. The Coming of War, 1931–1941

International relations in Europe and the Far East leading up to the outbreak of War.

* Not to be given in 1970–71.

COMPARATIVE HISTORY 301–310. Independent Study: Period Field

- | | |
|-----------------------------|-------------------------|
| 301. <i>Mr. Barraclough</i> | 306. <i>Mr. Lane</i> |
| 302. <i>Mr. Berkowitz</i> | 307. <i>Mr. Shatz</i> |
| 303. <i>Mr. Binion</i> | 308. <i>Mr. Soliday</i> |
| 304. <i>Mr. Black</i> | 309. <i>Mr. Demos</i> |
| 305. <i>Mr. Fischer</i> | 310. <i>Mr. Vanger</i> |

COMPARATIVE HISTORY 351–360. Independent Study: Category Field

- | | |
|-----------------------------|-------------------------|
| 351. <i>Mr. Barraclough</i> | 356. <i>Mr. Lane</i> |
| 352. <i>Mr. Berkowitz</i> | 357. <i>Mr. Shatz</i> |
| 353. <i>Mr. Binion</i> | 358. <i>Mr. Soliday</i> |
| 354. <i>Mr. Black</i> | 359. <i>Mr. Demos</i> |
| 355. <i>Mr. Fischer</i> | 360. <i>Mr. Vanger</i> |

COMPARATIVE HISTORY 391–399.

Supervised independent study while preparing for qualifying examination. The student will register for this course while defining his dissertation topic.

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|-----------------------------|-------------------------|
| 391. <i>Mr. Barraclough</i> | 396. <i>Mr. Lane</i> |
| 392. <i>Mr. Berkowitz</i> | 397. <i>Mr. Shatz</i> |
| 393. <i>Mr. Binion</i> | 398. <i>Mr. Soliday</i> |
| 394. <i>Mr. Black</i> | 399. <i>Mr. Demos</i> |
| 395. <i>Mr. Fischer</i> | |

COMPARATIVE HISTORY 401–408. Dissertation Research

- | | |
|-----------------------------|-------------------------|
| 401. <i>Mr. Barraclough</i> | 405. <i>Mr. Fischer</i> |
| 402. <i>Mr. Berkowitz</i> | 406. <i>Mr. Lane</i> |
| 403. <i>Mr. Binion</i> | 408. <i>Mr. Soliday</i> |
| 404. <i>Mr. Black</i> | 409. <i>Mr. Demos</i> |

In addition, the following courses may be taken as equivalent to Comparative History seminars.

HISTORY 133a. The Development of the European City to 1800
(Pro-Seminar)

Political institutions and social structure in various European cities from the High Middle Ages to the end of the eighteenth century. Readings and discussions will be supplemented by frequent lectures.

Mr. Soliday

HISTORY 134b. The Development of Absolutism in Early Modern Europe
(Pro-Seminar)

A comparative study of the political and social bases for monarchical absolutism in Europe, with special emphasis on the relationship between royal bureaucracies and local aristocracies in England, France, Spain, and several German states.

Mr. Soliday

HISTORY 135b. Ideology and Society

Problems in the relation of ideas and the evolution of modern society from the enlightenment to the contemporary world.

Mr. Weiss

HISTORY 140a. History of International Relations, 1890–1945

A diplomatic historian's interpretation of world history from the fall of Bismark to the Second World War.

Mr. Parker

HISTORY 144a. Studies in British History—1851 to the Present (Pro-Seminar)

Topics from the Crystal Palace to the Beatles, including Victorian society and culture, Britain in the world economy, high liberalism, socialism and the rise of labor, imperialism, Edwardian liberalism, economic decline, democracy and collectivism between the wars, Labor in power, mass culture. *Mr. Black*

HISTORY 160b. Professions and Elites (Pro-Seminar)

A comparative examination of social mobility and class structure in 19th and 20th century England and America. *Mr. Wilkinson*

HISTORY 167a. History and Psychology (Pro-Seminar)

An exploration of certain basic themes and problems in "interdisciplinary" study between the fields of history and psychology. Discussion will focus on a range of topics: biography, the social psychology of mass movements, modal personality, etc. Some prior acquaintance with both fields will be helpful.

To be run as a conference course with enrollment limited to twelve.

Mr. Demos

Contemporary Jewish Studies

Objectives

The graduate program in Contemporary Jewish Studies offers training on the Master of Arts level in various disciplines relating to the history, sociology and literature of contemporary Jewry. It is designed both for students who intend to devote themselves to teaching and research in contemporary Jewish studies and for those who plan careers in the field of Jewish communal and educational service.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Contemporary Jewish Studies program.

Faculty Executive Committee

Associate Professor LEON A. JICK, *Chairman*: Near Eastern and Judaic Studies.

Professor NAHUM M. SARNA, *Vice Chairman*: Near Eastern and Judaic Studies.

Professor ALEXANDER ALTMANN: Near Eastern and Judaic Studies.

Professor EGON BITTNER: Sociology.

Professor NAFTALI C. BRANDWEIN: Near Eastern and Judaic Studies.

- Professor ARNOLD GURIN: Social Administration.
 *Professor BENJAMIN HALPERN: Near Eastern and Judaic Studies.
 Professor MARSHALL SKLARE: Near Eastern and Judaic Studies.
 Associate Professor ALEX WEINGROD: Anthropology.
 *Assistant Professor JOSEPH S. LUKINSKY: Near Eastern and Judaic Studies.

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of a minimum of twenty-four course credits and a Master's thesis. It is expected that the Master of Arts degree will be earned in two years, but in special instances, one year will suffice. Normally, students will find it necessary to accomplish more than twenty-four course credits in order to insure adequate preparation for the degree.

Residence Requirement. The minimum residence requirement for the Master of Arts degree is one year.

Language Requirement. A candidate must demonstrate a basic knowledge of Hebrew or Yiddish which can, if necessary, be accomplished by successful completion of one year's study at Brandeis.

Field Work. Field experience, under the supervision of departmental faculty, follows the first year of academic work. The student will be exposed to a wide range of theoretical issues which will provide an opportunity to synthesize newly acquired academic material with problems presented in practice. Credit for field work is in addition to the 24 credits required for the first year of study.

Courses of Instruction

CJS 21. Introductory Yiddish

See N.E.J.S. 21 for description.

Mr. Szulkin

CJS 24. Intermediate Yiddish

See N.E.J.S. 24 for description.

Mr. Rothenberg

HEBREW 1. Introductory Hebrew

Mr. Fishbane

HEBREW 2. Intermediate Hebrew

Mrs. Goldberg

HEBREW 10. Introduction to Post Biblical Literature

Mr. Brandwein

CJS 126b. The History of the Jews in Modern Times

See N.E.J.S. 126b for description.

Mrs. Hoffman

* On Leave, 1970-71.

CJS 139a. Major Trends in Modern Hebrew Literature

See N.E.J.S. 139a for description.

Mr. Brandwein

*CJS 147a. The Ottoman Empire and the West

See N.E.J.S. 147a for description.

CJS 160a. The American Jewish Experience 1654–1885

A survey of American Jewish history from the earliest settlement to the consolidation by the 19th century German Jewish immigrants of their social, economic and ideological patterns.

Mr. Jick

CJS 160b. The Emergence of the American Jewish Pattern—1800 to the Present

The impact of mass immigration from Eastern Europe beginning in the 1880's. The challenge of socialism, Zionism, secular nationalism, and religious reform. The emergence of the institutions, ideologies, life styles and cultural norms which constitute the American Jewish pattern.

Mr. Jick

CJS 163a. The Sociology of the American Jew

See N.E.J.S. 163a for description.

Mr. Sklare

CJS 163b. Jewish Communal Structure and Organization

See N.E.J.S. 163b for description.

Mr. Sklare

CJS 166a. Modern Jewish Intellectual History to 1870

See N.E.J.S. 166a for description.

Mr. Silberstein

CJS 166b. Modern Jewish Intellectual History since 1870

See N.E.J.S. 166b for description.

Mr. Silberstein

CJS 168a. The Culture of East European Jewry

See N.E.J.S. 168a for description.

Mr. Goldsmith

*CJS 168b. The Literature of the Holocaust

See N.E.J.S. 168b for description

CJS 171b. Trends and Values in Yiddish Literature

See N.E.J.S. 171b for description.

Mr. Goldsmith

*CJS 172a. Seminar in Yiddish Literature: Mendeleyev Mokher Seforim, Sholom Aleichem and Y. L. Peretz

See N.E.J.S. 172a for description.

*CJS 172b. Seminar in Yiddish Literature: The Works of H. Leivick

See N.E.J.S. 172b for description.

CJS 173a. Seminar in Yiddish Literature: American Yiddish Poetry

See N.E.J.S. 173a for description.

Mr. Goldsmith

CJS 173b. Seminar in Yiddish Literature: Contemporary Poetry

See N.E.J.S. 173b for description.

Mr. Goldsmith

* Not to be given in 1970–71.

*CJS 188a. Socialism and Zionism

See History of Ideas 188a for description.

CJS 204a. Topics and Problems in Jewish Education

Selected issues related to the philosophy of Jewish education will be explored.
Mr. Arian

CJS 204b. Conceptual Models for Jewish Education

An examination of models for Jewish education such as religious education, ethnic education and character education with a view to developing a synthesis.
A seminar.
Mr. Arian

CJS 235. Readings in Jewish Education

Mr. Arian

CJS 250. Field Methods in Jewish Education

Internship experience in Jewish educational institutions. Individual and group supervision of interns by faculty members.
Open to second year students only. 6 credits.
Staff

Cross-Registration at Boston College, Boston University and Tufts University

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. A brochure suggesting courses for cross-registration at each of the host institutions is available at the Graduate School Office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course, and should expect to satisfy the prerequisites and requirements normally required for admission to that course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar, and should present this permit to the Graduate School Registrar of the host institution. *In the academic years 1970–71 and 1971–72, a student may normally receive only one registration permit.*

English and American Literature

Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers for candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a Bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

Professor BENJAMIN B. HOOVER, *Chairman*: Eighteenth century literature.

Professor J. V. CUNNINGHAM: Renaissance literature. Poetry.

Professor EDWARD ENGELBERG: Victorian literature. Modern literature.

Professor VICTOR HARRIS: Seventeenth century literature.

Professor MILTON HINDUS: American literature. Contemporary literature.

Professor ROBERT O. PREYER: Victorian literature.

***Professor PHILIP RAHV: American literature. Criticism.

Professor JOHN H. SMITH: Renaissance literature.

*Professor AILEEN WARD: Nineteenth century literature.

Associate Professor ALLEN R. GROSSMAN: Contemporary literature. Seventeenth century literature.

Associate Professor SAMUEL JAY KEYSER: Linguistics. Medieval literature.

Associate Professor PETER SWIGGART: American literature.

***Assistant Professor CHARLES R. BLYTH, JR.: Medieval literature.

Assistant Professor ARLENE L. CLIFT: American literature.

Assistant Professor ARTHUR EDELSTEIN: American literature.

Assistant Professor JAMES F. GOLDBERG: Nineteenth century literature.

**Assistant Professor KAREN W. KLEIN: Medieval literature.

**Assistant Professor ALAN LELCHUK: Victorian literature. Creative writing.

Assistant Professor ALAN L. LEVITAN: Renaissance literature.

Assistant Professor RICHARD J. ONORATO: Romantic literature.

Assistant Professor S. SUSAN STAVES: Restoration literature.

Lecturer HARRISON HOBLITZELLE: Nineteenth century intellectual history.

Lecturer JOHN BURT WIGHT: Teacher training.

Degree Requirements

Following are the degree requirements for the Department of English and American Literature. Students should also consult the Academic Regulations and General Degree Requirements sections on pages 51 and 58.

* On Leave, 1970-71.

** On Leave, Fall Term, 1970-71.

*** On Leave, Spring Term, 1970-71.

Master of Arts

Program of Study. Each student will take English 201a. In addition, the normal program will consist, in each term, of either (1) two seminars at the 200-level or (2) one seminar and two 100-level courses, as approved by the departmental adviser and the Director of Graduate Studies.

Residence Requirement. The minimum residence requirement is one year, though students with inadequate preparation may require more.

Language Requirements. A reading knowledge of a major foreign language (modern European, ancient Greek, or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

Qualifying Examination. A written and oral examination on one of several major texts. This Major Text Examination, which also serves as a qualifying examination for the Ph.D. program, will be given early in the Spring Term.

Qualifying Essays. Two papers on topics in different areas of English and American Literature must be submitted to the Director of Graduate Studies one month before the end of the Spring Term for evaluation by the Committee on Graduate Studies. These papers will ordinarily have been written in seminars at Brandeis University.



Doctor of Philosophy

Admission to the Ph.D. Program. (1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. Program by the Department upon recommendation of the Committee on Graduate Studies.

(2) Students who enter with a Master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination and qualifying essay requirements described above under the Master of Arts Program. Provided these requirements are fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. Program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission, up to a year's residence and course credit for work completed elsewhere may be granted.

Program of Study. After admission to the Ph.D. Program, each student will plan a program of study with a faculty adviser of his choice; each such program must be approved by the Director of Graduate Studies. The student may take any combination of seminars, regular courses, and faculty-directed independent reading courses which will yield a coherent program of study as approved by the student's adviser and by the Director of Graduate Studies.

Language Requirements. A reading knowledge of two major foreign languages (modern European, ancient Greek, or Latin); or a high degree of competence in one such language and in its literature. The completion of the language requirements at another university does not exempt the student from the Brandeis requirements.

Residence Requirement. The minimum residence requirement is one year beyond the Master's degree or two years beyond the Bachelor's.

Training in Teaching. Some experience in teaching is normally required. Those students who are not Teaching Assistants may arrange for apprentice teaching with the Director of Teacher Training.

Admission to Candidacy. A student will be recommended by the Department for Admission to Candidacy for the Ph.D. degree after he has completed with distinction a program of studies which demonstrates knowledge and mastery in the field of English and American Literature, has passed all departmental qualifying examinations; has completed all language requirements; and has submitted a formal dissertation proposal and (following its approval by the student's dissertation director) successfully defended the proposal before a committee appointed by the Director of Graduate Studies.

Dissertation and Defense. Each student will submit a dissertation in a form approved by his dissertation director and by a committee appointed by the Director of Graduate Studies. He will defend the dissertation at a Final

Oral Examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project, or a textual project.

History and Structure of English

The department also offers an alternative program in the history and structure of the English language, with specialization in Old, Middle, or Early Modern English. For details, address the chairman of the Department.

Courses of Instruction

ENGLISH 121a. Old English

An intensive introduction to Old English language utilizing a critical reading of major shorter Old English poetry (including *The Dream of the Rood*, *The Seafarer*, and *The Battle of Maldon*). Some attention will be given to the place of this literature in Anglo-Saxon culture.
Mr. Blyth

*ENGLISH 121b. Beowulf

ENGLISH 123a. Chaucer

The major works of Chaucer read in the original language, with emphasis on two themes: Chaucer's contribution to narrative art and his implicit theory of fiction, and Chaucer's work as the reflection of traditions of later medieval Christian culture.
Mr. Blyth

ENGLISH 140a. Shakespeare

Intensive study of a small number of Shakespeare's plays including some less well-known plays and their backgrounds.
Mr. Smith

ENGLISH 142a. Elizabethan and Jacobean Drama

A survey of major dramatic works, excluding Shakespeare, from roughly the mid-sixteenth to the mid-seventeenth centuries.
Mr. Smith

ENGLISH 143b. Music and Poetry: Their Changing Relationships

A survey of English lyric poetry in its literal sense of "texts to be sung." The changing relationships between poets and composers, and the esthetic and social motivations behind them.
Mr. Levitan

ENGLISH 155b. Milton and Blake

Mr. Harris

*ENGLISH 160a. Augustan Satire

Satire in prose and poetry during the earlier part of the eighteenth century. Swift, Defoe, Pope, Gay, Fielding, and other writers.

ENGLISH 165b. Restoration Drama

Comedy, heroic drama, and political tragedy. Dryden, Wycherly, Etherege, Shadwell, Lee, Otway, and Congreve.
Miss Staves

ENGLISH 170a. Some Theories of Fiction and Style

The history of criticism, ancient and renaissance, with some more recent texts.
Mr. Cunningham

* Not to be given in 1970-71.

ENGLISH 171a. Romantic Poetry

Emphasis on Blake, Wordsworth, and Coleridge.

Mr. Goldberg

ENGLISH 173b. Culture and Society: Literary-Social Criticism and Social Theory in the Nineteenth Century

A comparative analysis of the growth of the ideas of culture (Coleridge, Carlyle, Arnold, and others) and the development of social theory (de Tocqueville, Mill, Engels, Marx, and others).

Mr. Goldberg

ENGLISH 174a. Puritanism in American Literature

The course will treat the historical and literary background of Puritanism in America in relation to uses of and reactions to the concepts and connotations in 19th and 20th century writers and critics. Particular attention will be devoted to Hawthorne.

Miss Clift

ENGLISH 175b. Literature and Poverty in Twentieth Century America

Study will involve works of history, anthropology, and sociology as well as fiction.

Mr. Edelstein

ENGLISH 177a. The Russian Novel: Tolstoy and Dostoevsky

Mr. Rahv

ENGLISH 178a. Studies in the Literature of Nineteenth Century Social Criticism

An inquiry into the Western writers and ideas that influenced Gandhi, the seminar deals with the intellectual backgrounds of certain contemporary problems (mechanization and human values, social involvement and withdrawal, peace and the "moral equivalent" of war) as seen in the selected writings—and in the lives—of Carlyle, Ruskin, Emerson, Thoreau, Tolstoy and Gandhi himself.

Mr. Hoblitzelle

*ENGLISH 180a. Change and Continuity in Modern Literature

Readings in modern British and American literature, with some works drawn from representative European authors.

ENGLISH 183b. Nineteenth Century American Literature

A study of the similarities and differences between those 19th century American poets who were accepted in their own time (Bryant, Longfellow, Lowell, Whittier, Holmes, Emerson, Poe) and those whose main recognition came in the 20th century (Whitman, Emily Dickinson, Melville).

Mr. Hindus

*ENGLISH 185b. Modern British and American Drama

ENGLISH 188b. Linguistics and Meaning

Contemporary efforts to construct a linguistics theory of meaning will be compared to other modern theories of language including logical positivism and British "ordinary language" philosophy. Special attention will be paid to the evidence of metaphor and of poetic meaning. No training in linguistics is necessary.

Mr. Swiggart

ENGLISH 191a. Introduction to Linguistics

This course begins with a survey of the philosophical, psychological, and biological foundations of human language. It focuses on the outstanding questions which an adequate theory of language must answer and considers in some detail current attempts to answer them.

Mr. Keyser

ENGLISH 191b. Introduction to Linguistic Structure

The aim of this course is to awaken the student's awareness of how much a speaker of English knows about his language that he has not been explicitly taught, to show that this knowledge requires explanation, and to develop a theory of linguistic structure which can account for it. No knowledge of formal grammar or linguistics is assumed.

Mr. Jackendoff

ENGLISH 192b. History of the English Language

This course begins with an introduction into the sound system of modern English. It then looks at the sound systems of earlier stages of the language and examines the ways in which earlier stages changed into later stages. Finally, it attempts to generalize from these instances to a theory of linguistic change.

Mr. Keyser

ENGLISH 193a. Problems in Phonology

A seminar in phonology in the light of universal grammar.

Prerequisite: Consent of the instructor.

Mr. Keyser

ENGLISH 196aR. Universal Grammar

A study of the universals of human language, which both make possible and limit linguistic differences among languages. The course attempts to develop a theory of linguistic structure which can account for the syntactic phenomena found in human languages. Data will be drawn primarily from English.

Prerequisite: English 191a or 191b.

Mr. Jackendoff

***ENGLISH 196b. Universal Grammar**

Continuation of English 196a, with additional data drawn from languages other than English as the ability to handle such data is developed.

ENGLISH 197a. Problems in Syntax*ENGLISH 197b. Syntactic Theory**

A seminar in syntactic theory in the light of universal grammar.

Prerequisite: Consent of the instructor.

Mr. Jackendoff

ENGLISH 199a and b. Directed Research in Linguistics

Mr. Keyser

ENGLISH 101a. Directed Writing: Fiction

Mr. Keyser

ENGLISH 101b. Directed Writing: Fiction

Mr. Lechuk

ENGLISH 102b. Directed Writing: Poetry and Prose

Mr. Cunningham

ENGLISH 201a. The English Seminar

The English Seminar meets twice a month for lectures and discussions on matters of common interest.

Non-Credit. Required of all first year students.

Mr. Hoover



Seminars

ENGLISH 213a. Shakespeare	<i>Mr. Levitan</i>
ENGLISH 214a. Renaissance	<i>Mr. Harris</i>
ENGLISH 216b. Eighteenth Century	<i>Mr. Hoover</i>
ENGLISH 217b. Naive and Sentimental Poetry Elegy, Idyll, and Satire after 1800.	<i>Mr. Engelberg</i>
ENGLISH 218a. Victorian Poetry and Poetics	<i>Mr. Preyer</i>
ENGLISH 219b. American Poetry	<i>Mr. Cunningham</i>
ENGLISH 220b. American Literature and Society	<i>Mr. Bercovitch</i>
ENGLISH 223a. Hawthorne and Melville	<i>Mr. Rahv</i>
ENGLISH 295b. Studies in a Major Text Required of all first year students.	<i>Mr. Smith</i>
ENGLISH 301a and b. Graduate Colloquium	<i>Staff</i>
ENGLISH 311. Seminar in Teaching	<i>Mr. Wight</i>
ENGLISH 400–411a and b. Dissertation Research	
400. <i>Mr. Cunningham</i>	406. <i>Mr. Preyer</i>
401. <i>Mr. Grossman</i>	407. <i>Mr. Rahv</i>
402. <i>Mr. Harris</i>	408. <i>Mr. Smith</i>
403. <i>Mr. Hindus</i>	409. <i>Mr. Swiggart</i>
404. <i>Mr. Hoover</i>	410. <i>Miss Ward</i>
405. <i>Mr. Keyser</i>	411. <i>Mr. Bercovitch</i>

History

See Comparative History (page 77) and History of Ideas (page 100).

History of American Civilization

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. training in one of the disciplines of the social sciences or humanities—politics, or literature, for example—to provide perspectives and methods that can illuminate historical problems;

2. a thematic field in American history, involving a distinctive subject-matter and discipline: for example, American social history, American legal and constitutional history, Black history, American intellectual history, or American economic history.

3. a comparative topic in American and European history, involving a distinctive subject-matter and discipline: 20th century British and American literature, for example, or 19th century emigration/immigration.

A small, select student body will work in close cooperation with the faculty. From the beginning, individual programs of study will be developed to prepare students for their oral qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research. Second year students are encouraged to choose readings courses and independent study, under faculty guidance, to complete their preparation in American history. Studies in the other fields will be arranged individually, either through standard courses or directed readings. Applicants should note with care the four parts of the examination, specified under *Degree Requirements*, in which all students are expected to demonstrate proficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some

fundamental courses in American history, politics, or literature. Above all, the admissions committee must be satisfied that the applicant's interests in American history are serious and that his aspirations are professional.

Faculty

Executive Committee. Professor MARVIN MEYERS, *Chairman*; Associate Professor JOHN PUTNAM DEMOS, *Secretary*; Professors DAVID HACKETT FISCHER, MORTON KELLER, JOHN P. ROCHE; Assistant Professors JEROLD S. AUERBACH, GERALD S. BERNSTEIN, RICHARD SENNETT.

Staff:

Professor DAVID HACKETT FISCHER: The early republic. Political institutions. History of education.

*Professor MORTON KELLER: Modern America. Political institutions.

Professor MAX LERNER: Social theory. Contemporary history.

Professor MARVIN MEYERS: Political and social thought. Jacksonian era. The early republic.

Professor JOHN P. ROCHE: Political theory. Constitutional history. Contemporary history.

Associate Professor JOHN P. DEMOS: Colonial period. Historical demography. History of the family.

Assistant Professor JEROLD A. AUERBACH: Twentieth century. Labor and legal history. Civil liberties.

Instructor JAMES R. GREEN: American social and urban history.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full year of course work at Brandeis University (24 credits), including the two "200" level research courses, and (2) have taken the bibliographical examination, and (3) have passed the foreign language requirement, and (4) satisfactorily completed History 200a.

Doctor of Philosophy

Program of Study. Doctoral candidates must complete two years in residence at Brandeis, and a minimum of forty-eight course credits. Programs

* On Leave, 1970-71.

of study and concentration will be formulated for each student, subject to the approval of the Executive Committee. Incoming students normally will be expected to take History 200a and two six-credit courses of Research in American History in their first year of residence, one each semester. However, with the permission of the Executive Committee, the second research course may be taken in the first semester of the second year. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program.

Language requirement. A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed his foreign language examination by the end of his first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement. Special review classes will be available.

Preliminary Bibliographical Examination: All students must take a preliminary bibliographical examination on a selected list of works in American history. The examination must be taken no later than the second semester of their first year. Students may frame a list of twenty-five titles of their own choice on which to be examined. If these titles cover the span of American history from the colonial period to the present and include a variety of approaches (economic, political, cultural, etc.) as well as periods, the Chairman of the program will approve of the list. The examination is about an hour, is informal, and is conducted by two professors designated by the chairman. The examination, which is not graded, is intended to give the student some experience in responding to oral interrogation on historical works.

Qualifying Examination. Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history; (2) a period of specialization in American History; (3) an area of modern European history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of specialization will normally be selected from the following: 1607–1763, 1763–1815, 1815–1877, 1877–1914, 1914–present. Proposed European and related fields must be approved by the Executive Committee. Students entering the program without previous graduate training in American history are expected to take the Qualifying Examination no later than the end

of their fifth semester or residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere or who have one year of transfer credit for work taken elsewhere are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Normally the qualifying examination is only an oral examination. However, students may choose to take written examinations supplemented by orals as an option to the strictly oral examination. For those who so choose, there will be four written examinations, each two hours in duration, covering the four parts of the present oral examination. Each written examination will require long essays on major themes; the student will be given a choice in selecting questions that he wishes to answer. The written examinations are to be answered by the student "in class" and without prior notification of the questions. The four written tests will be administered over two, or possibly three days. For those who choose to do the written tests, the orals will further explore the student's answers to his written tests, but will allow exploration of other areas as well. The student will be asked to defend, explain, and elaborate his answers to the questions on the written tests. The examiner may then cover parts of the field not dealt with on the written examination. This oral will be administered no later than two days after the last written tests, and will last two hours. The student will be judged equally on his answers to the written and oral tests.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, a preliminary bibliographical examination, and a general qualifying examination.

Dissertation and Defense. The candidate will be required to prepare a prospectus for his dissertation to be submitted for approval to the Committee. When the dissertation is accepted by the committee, a final oral examination will be scheduled at which the candidate must successfully defend his dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended his dissertation, he will give a public lecture.

Courses of Instruction

HISTORY 150b. American Colonial History

Major trends in the social, intellectual and political life of the American colonies, up to about 1750.

Mr. Demos

HISTORY 151aR. The Founding of the American Republic

An inquiry into the ideas and movements that formed a new republican regime in the United States. How did the Founders understand their heritage and circumstances? What kind of society and nation did they mean to create? What were the sources of division and conflict?

Mr. Meyers

HISTORY 151b. Democratic Revolution in America

An intensive study of the democratization of social and cultural institutions in the United States, 1790–1830.

Mr. Fischer

HISTORY 152b. Problems of Democracy in Jacksonian America

(Pro-Seminar)

An examination of the nature and consequences of democratization in American society and politics, emphasizing issues of interpretation. The point of departure will be Tocqueville's classic analysis of democracy in America.

Mr. Meyers

HISTORY 154a. Modern America

An examination of selected twentieth century problems, with emphasis on the perceptions of intellectuals attempting to cope with social change. Readings will consist primarily of radical critiques; extensive class discussion will focus on the contrasting views presented in the readings by the instructor.

Mr. Auerbach

HISTORY 154b. The United States between the World Wars

(Pro-Seminar)

A comparative analysis of selected aspects of American society during the 20's and 30's.

Mr. Auerbach

HISTORY 155b. Civil Liberties in America

Examination of the historical development of individual liberties with emphasis on the role of government and the relationship between civil liberties and political and social movements.

Mr. Auerbach

***HISTORY 156b. A History of Black America**

A historical survey of major themes and trends in the experience of black people in the United States.

HISTORY 157a. Political Justice in Modern America

(Pro-Seminar)

The use of legal procedures to achieve political goals. Specific cases (e.g. those involving Leo Frank, Tom Mooney, the Scottsboro boys, and Dr. Spock) and theoretical literature will be analyzed.

Mr. Auerbach

***HISTORY 158b. Topics in the History of American Law (Pro-Seminar)**

Law as a means of social control and as an instrument of social change, with special emphasis on the relation of law and lawyers to 20th century social issues.

***HISTORY 159b. Wealth and Power in Modern America**

(Pro-Seminar)

An exploration of the interplay of economic interest and public policy over the past century of American life.

* Not to be given in 1970–71.

HISTORY 160b. Professions and Elites

(Pro-Seminar)

A comparative examination of social mobility and class structure in 19th and 20th century England and America. *Mr. Wilkinson*

HISTORY 163a. The American Political Tradition: Origins to the Civil War

An examination of some critical arguments of American history over the problems of political life. What values and what views or reality guided Americans in their choice of political ends and means? How deep were the conflicts of ideas, how sharp the breaks between generations? Selected contemporary writings will form the primary basis for discussion. *Mr. Meyers*

*HISTORY 164a. The American Polity to 1860

This course treats public life in America—politics, government, law—as a social institution comparable to the church, the family or the corporation. The first semester examines this institution as part of the formation of a distinctive American life in the colonial and early national periods, culminating in the crisis of the Civil War.

*HISTORY 164bR. Politics of Modern America

The political system of the past century is examined as one of the primary social institutions through which Americans have confronted industrialization, urbanization, ethnic diversity, and social change.

HISTORY 165a and b. The Social History of Modern America

An analysis of the transformation of American life wrought by urbanization and industrialization. Discussion of key texts, including fiction. The course will be divisible though students interested in social history should take it as a full-year course. *Mr. Green*

HISTORY 166a. History of American Constitutional Law and Theory

The history of the Constitution and its interpretation by the Supreme Court against the background of political and economic change from the foundation of the Republic to the Civil War. Origins and development of American constitutional thought and institutions, with stress on problems of judicial review and the role of the judiciary in defining the powers and limitations of government. *Mr. Roche*

HISTORY 166b. History of American Constitutional Law and Theory

The development of American constitutional law and theory since the Civil War with the emphasis on the adaptation of the Constitution to the changing needs of American society. *Mr. Roche*

HISTORY 167a. History and Psychology

(Pro-Seminar)

An exploration of certain basic themes and problems in "interdisciplinary" study between the fields of history and psychology. Discussion will focus on a range of topics: biography, the social psychology of mass movements, modal personality, etc. Some prior acquaintance with both fields will be helpful.

To be run as a conference with enrollment limited to 12.

Mr. Demos

***HISTORY 167b. Topics in the History of American Family Life**

(Pro-Seminar)

An exploration of certain basic themes and problems in the historical study of the family. To be conducted as a conference course, with occasional short reports from each of the participants.

***HISTORY 168b. Topics in Twentieth Century American Urban History**

An examination of the social effects or urban growth from the beginning of the century to the Great Depression.

HISTORY 169a. History of American Radicalism

(Pro-Seminar)

Readings and discussion of major radical social movements in the United States from the American Revolution to the present.

Enrollment limited to 12 students.

*Mr. Green***HISTORY 169b. Working Class History in the United States**

(Pro-Seminar)

The study of life and labor of the working class in various stages of industrial America.

Enrollment limited to 12 students.

*Mr. Green***HISTORY 200a. Pro-Seminar: An Introduction to the History of American Civilization***Staff***HISTORY 201–210. Research in American History**

The following are available in either semester.

201a or b. *Mr. Bernstein*207a or b. *Mr. Meyers*203a or b. *Mr. Demos*209a or b. *Mr. Roche*204a or b. *Mr. Fischer*210a or b. *Mr. Sennett**205a or b. *Mr. Keller***HISTORY 301–310. Readings in the History of American Civilization**

The following are available in either semester.

301a or b. *Mr. Bernstein*306a or b. *Mr. Green*302a or b. *Mr. Black*307a or b. *Mr. Meyers*303a or b. *Mr. Demos*309a or b. *Mr. Roche*304a or b. *Mr. Fischer*310a or b. *Mr. Sennett**305a or b. *Mr. Keller***HISTORY 401–410. Dissertation Research**401. *Mr. Bernstein*406. *Mr. Green*403. *Mr. Demos*407. *Mr. Meyers*404. *Mr. Fischer*409. *Mr. Roche*405. *Mr. Keller*410. *Mr. Sennett*

° Not to be given in 1970–71.

* On Leave, 1970–71.

Faculty and courses available to History of American Civilization students in modern European history, and in related disciplines, are listed by departments in the Graduate School and College catalogs. Courses and directed readings in these areas may be taken by permission of the instructor and of the Executive Committee. A select list of the faculty whose courses are relevant to this program include: Messrs. Barraclough, Binion, Black, Shatz, Soliday and Vangar (Comparative History, History); Messrs. Rahv and Swiggart (English and American Literature); Messrs. Berliner, Evans, Lefeber, Rosenthal, and Mrs. Solow (Economics); Mr. Bernstein (Fine Arts); Mr. Lubasz (History of Ideas); Mr. Aiken (Philosophy); Messrs. Fuchs, Lerner, Macridis, Waltz and Woll (Politics); Messrs. Fellman and Kecskemeti (Sociology); Mr. Clay (Theater Arts).

History of Ideas

Objectives

The program in the History of Ideas leads to the degree of Doctor of Philosophy in the History of Ideas. It is designed to give students a broad understanding of the historical development of ideas in several fields of thought, together with thorough training in the history of one of those fields. In practical terms, it prepares students, variously, for teaching and research in intellectual history and the history of science, and for historically-oriented teaching and research in philosophy and social science.

The program treats past thought systematically as well as historically, and is essentially interdisciplinary in character. The endeavor throughout is to examine the genesis of intellectual positions within a complex socio-historical matrix, the interrelation between theoretical and practical activities, and the role of ideas in human affairs.

A student trained in the program is expected to acquire a good general grasp of the theoretical and methodological problems involved in the comparative historical study of ideas, and of the general and intellectual history of a given period (ancient, medieval, renaissance and reformation, modern, or contemporary). He is expected also to attain special competence in dealing systematically as well as historically with any one field of thought (philosophical, scientific, social) within the period of chronological concentration, and with the classic texts of that field as a whole. Finally, he is expected to acquire a competent knowledge of some branch of an external subject related to his special interests (for example, in philosophy: epistemology, philosophy of science, or social and political philosophy; in history: a period of national history or a category of comparative history; in sociology: political sociology, sociology of literature, or social psychology).

Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who propose to specialize in the History of Philosophical Thought should normally present an undergraduate major in philosophy, together with evidence of adequate preparation in history or one of the social sciences; applicants who propose to specialize in the History of Scientific Thought should normally present *either* an undergraduate major in a natural science, together with evidence of adequate previous experience in history and philosophy *or* an undergraduate major in history or philosophy, together with evidence of adequate previous experience in a natural science; applicants who propose to specialize in the History of Social Thought should normally present an undergraduate major in history, philosophy, or one of the social sciences.

Applicants must be prepared to pass an examination in Latin, French or German at the beginning of their first year of residence, and to pass an examination in one of the other two languages at the beginning of their second year of residence.

Applications must include a sample of the student's written work.

Faculty

Professor ALASDAIR MACINTYRE, *Chairman*; Professors HENRY D. AIKEN (Philosophy), DAVID S. BERKOWITZ (History), PETER DIAMANDOPOULOS (Philosophy), *WALTER LAQUEUR; Visiting Professor VLADIMIR DEDIJER; Associate Professor *HEINZ M. LUBASZ; Assistant Professors GERALD N. IZENBERG, ROGER SMITH.

The following departments are associated with the History of Ideas program: Classics, Economics, English and American Literature, European Languages and Comparative Literature, History, Near Eastern and Judaic Studies, Philosophy, Politics and Sociology.

Degree Requirements

Master of Arts

In principle, only applicants for the Ph.D. program are accepted. There is no M.A. program as such. However, the M.A. degree will be awarded upon completion of the following requirements:

1. One year of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in Latin, French or German.
4. Submission, by May 1, of an acceptable, substantial, scholarly paper written during the course of the year.

* On Leave, 1970-71.

Doctor of Philosophy

The requirements for the Ph.D. degree are as follows:

1. Two years of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in two of the following languages: Latin, French, German; and in any additional language needed for advanced work in the student's area of specialization.
4. Submission, by May 1 of the student's first year of residence, of an acceptable, substantial, scholarly paper written during the course of the year.
5. Passing the Qualifying Examinations with distinction.
6. Admission to candidacy.
7. Submission of a doctoral dissertation approved by the department.
8. Successful defense of the dissertation.

Program of Study. Each student will plan his program of study in consultation with his adviser.

The program of study is to include the required minimum number of courses in each of the following rubrics:

I. Theory and Method

History of Ideas 200c in the first year; one additional half-course or seminar; one tutorial.

II. General and Intellectual History

Two half-courses in the period in which the student is concentrating (History of Ideas 110, 120, 130, 140 or 150).

III. Fields of Thought

1. History of Philosophical Thought
 2. History of Scientific Thought
 3. History of Social (i.e., Social, Political and Economic) Thought
- Four half-courses in the student's field of specialization, including at least one seminar.

Two half-courses, in one or both of the fields in which the student is not specializing; or one such course plus a course in a special phase of intellectual history (e.g., the French Enlightenment, the Age of Romanticism); or two courses in special phases of intellectual history.

IV. External Subject

Two half-courses in any *one* discipline related to the student's special interests.

At the discretion of the student's adviser, one or two (but not more) of the courses required in any one year may take the form of individual reading or research. Reading courses are intended to afford students the opportunity to prepare themselves in the fields of the qualifying examinations, lecture courses and seminars not being specifically intended as preparation for these examinations.

Language Requirements. A proficient reading knowledge of two of the following languages is required: Latin, French, German. In order to be admitted to candidacy for the Ph.D. degree, a student whose further work requires the use of an additional language must first demonstrate proficiency in that language. Students are expected to pass the examination in at least one of the two required languages in their first year of residence, the other in the second year. Language examinations are given early in the fall term, re-examinations in the spring term. No student who fails to pass at least one language examination in his first year will be allowed to proceed to a second year of study until the deficiency has been remedied; no student who fails to pass the examination in the second language will be admitted to candidacy until the deficiency has been remedied.

Qualifying Examinations. The Qualifying Examinations are to be taken toward the end of the second or at the beginning of the third year of graduate study, and in no case later than the end of the third year. The form of the examinations—written, oral, “take-home,” etc.—is decided by the student in consultation with his adviser.

The qualifying examinations comprise the following areas:

1. The General and Intellectual History of a Period.

Ancient: c. 800 B.C. to c. 400 A.D.

Medieval: c. 300 B.C. to c. 1500 A.D.

Renaissance and Reformation: c. 1250 to c. 1700

Modern: c. 1650 to c. 1890, with some attention to the period 1890 to 1960

Contemporary: c. 1789 to 1960, with particular attention to the period 1890 to 1960.

Brandeis Sailing Club



2. The History of a Field of Thought within that Period.
3. The General History of that Field, with emphasis on the classics thereof.
4. An External Subject.

The requirement in the External Subject may be met by completing with distinction two courses in that subject.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed the requirements as to residence, study, language proficiency, paper, qualifying examinations, and when the subject of his dissertation has been approved by the department. Such approval depends, in part, upon the student's passing with distinction, an oral examination in the general area of his proposed topic.

Dissertation and Final Oral Examination. Once a student has been admitted to candidacy for the Ph.D. degree, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of the adviser. It will be read by the committee, and by such external readers as the committee may wish to consult. When the dissertation has been accepted, the candidate will defend it in a final oral examination.

Courses of Instruction

Group I. Theory and Method

HISTORY OF IDEAS 200c. Introduction to the History of Ideas

Exploration of various approaches to the history of ideas, and of the underlying theoretical problems.

Required of all first-year students.

Messrs. Lubasz and Izenberg

HISTORY OF IDEAS 104b. Sociology of Knowledge

See Sociology 110b.

Mr. Wolff

*HISTORY OF IDEAS 105a. Social and Political Philosophy

See Philosophy 151a.

*HISTORY OF IDEAS 105b. Philosophy of History

See Philosophy 152b.

HISTORY OF IDEAS 106aR. Historiography

Mr. Berkowitz

*HISTORY OF IDEAS 106b. Sociology of Literature

See Sociology 106b.

HISTORY OF IDEAS 107b. Sociology of Science

See Sociology 154b.

Mr. Fisher

HISTORY OF IDEAS 108b. Philosophy of Social Sciences

See Philosophy 148b.

Mr. Morgenbesser

* Not to be given in 1970-71.

HISTORY OF IDEAS 204a and b. Sociology and History

See Sociology 204a and b.

Mr. Wolff

HISTORY OF IDEAS 206a. Some Pre-Theoretical Problems of Sociology

See Sociology 228a.

Mr. Wolff

HISTORY OF IDEAS 209a and b. Tutorial: Explication and Interpretation of Text

209a-1

209a-2

209a-3

209b-1

209b-2

To be announced

Group II. Intellectual History

HISTORY OF IDEAS 110a. History of Rome: Constitutional History

See Classics 112a

Mr. Beye

HISTORY OF IDEAS 110b. History of Greece

See Classics 111b.

Mr. Beye

HISTORY OF IDEAS 117a. The Book of Job and the Problem of Evil

See N.E.J.S. 117a.

Mr. Glatzer

*HISTORY OF IDEAS 120a. The Civilization of the Early Middle Ages

See History 123a.

*HISTORY OF IDEAS 120b. The Civilization of the High and Late Middle Ages

See History 123b.

*HISTORY OF IDEAS 130aR. The Italian Renaissance

See History 125aR.

HISTORY OF IDEAS 130a. The Reformation

See History 128a.

Mr. Berkowitz

*HISTORY OF IDEAS 140a. Intellectual History of Modern Europe, 1650-1789

HISTORY OF IDEAS 140b. Intellectual History of Modern Europe, 1789-1890

A survey of dominant thinkers and currents of thought, with particular attention to the development of social, political and economic ideas. *Mr. Izenberg*

HISTORY OF IDEAS 143aR. The French Enlightenment

See French 127aR.

Prerequisite: Ability to read, and to understand spoken French. *Mr. Gendzier*

*HISTORY OF IDEAS 144a. European Culture since the Enlightenment

See History 135a.

* Not to be given in 1970-71.

*HISTORY OF IDEAS 146a and b. The Age of Romanticism

See History 138a and b.

HISTORY OF IDEAS 147a. The Development of the Russian Intelligentsia

See History 147a.

Mr. Shatz

HISTORY OF IDEAS 148a. Modern Jewish Intellectual History to 1870

See N.E.J.S. 166a.

Mr. Halpern

HISTORY OF IDEAS 150a. Intellectual History of Contemporary Europe, 1890–1930

A survey of dominant thinkers and currents of thought, with particular emphasis on the disintegration of the rationalist tradition in philosophy, psychology, social thought, in literature and the arts.

Mr. Izenberg

*HISTORY OF IDEAS 150b. Intellectual History of Contemporary Europe, 1930–1960

A survey of dominant thinkers and currents of thought, with particular emphasis on attempts to resolve the crisis in the rationalist tradition, in philosophy, psychology, social thought, in literature and the arts.

*HISTORY OF IDEAS 153aR. European Thought and Culture, 1890–1914

See History 137aR.

HISTORY OF IDEAS 158b. Modern Jewish Intellectual History since 1870

See N.E.J.S. 166b.

Mr. Silberstein

*HISTORY OF IDEAS 159a. Culture and Politics in Europe, 1930–1960

An examination of significant trends in the cultural life of Britain, France, Italy, Germany and Eastern Europe, with emphasis on the relation of culture and politics (the culture of fascism, communism and the intellectuals, main issues in post-war literature).

*HISTORY OF IDEAS 230b. Research Seminar: The Reformation

See History 232b.

HISTORY OF IDEAS 247a. Topics in the History of the Jewish Enlightenment and Emancipation

See N.E.J.S. 266a.

Mr. Halpern

Group III. History of Fields of Thought

History of Philosophical Thought

HISTORY OF IDEAS 162a. Plato

See Philosophy 105a.

Mr. Sommers

*HISTORY OF IDEAS 162b. Aristotle

See Philosophy 105b.

* Not to be given in 1970–71.

HISTORY OF IDEAS 165aR. Continental Rationalism

See Philosophy 143aR.

Mr. Diamandopoulos

*HISTORY OF IDEAS 165b. British Empiricism

See Philosophy 143b.

*HISTORY OF IDEAS 166a. Empiricism versus Rationalism

See Philosophy 153a.

*HISTORY OF IDEAS 167a. Kant

See Philosophy 167a.

HISTORY OF IDEAS 168. Post-Kantian Idealism and its Critics

An extensive examination of Hegel's philosophy. The Marxist, existentialist and empiricist criticisms of Hegel will be considered.

Students who propose to take the course are advised that it will be an advantage if they have already taken the course on Kant.

Mr. MacIntyre

HISTORY OF IDEAS 169aR. The Continental Existentialists and Their American Counterparts

See Philosophy 134aR.

Mr. Aiken

HISTORY OF IDEAS 169b. Marxism and Pragmatism

See Philosophy 144b.

Mr. Morgenbesser

HISTORY OF IDEAS 263b. Selected Texts from Jewish Mystical Literature

See N.E.J.S. 236b.

Mr. Altmann

*HISTORY OF IDEAS 265b. Seminar in Rationalism

See Philosophy 203b.

HISTORY OF IDEAS 268a. Moses Mendelssohn and the Enlightenment

See N.E.J.S. 280a.

Mr. Altmann

History of Scientific Thought

HISTORY OF IDEAS 170. The History of Science, 1500–1800

The development of scientific thought in the setting of general intellectual and social change.

Mr. Smith

HISTORY OF IDEAS 174a. The Development of the Concept of Evolution

The course will outline problems and ideas which led up to Charles Darwin's *On the Origin of Species* (1859).

*Mr. Smith*HISTORY OF IDEAS 174b. Philosophical Issues in Darwin's *On the Origin of Species*

Tutorial.

Mr. Smith

HISTORY OF IDEAS 178. Body, Mind and Nature, 1830–1880

A study of the ways man's mind was discussed in the period, with emphasis on public debate of the issues in their cultural setting.

Mr. Smith

* Not to be given in 1970–71.

HISTORY OF IDEAS 179b. The Origins and Development of Freudian Theory

A study of Freud's basic theories on individual and social psychology as they developed from *Studies in Hysteria* to *Civilization and its Discontents*.

Pro-Seminar.

Mr. Izenberg

History of Social Thought

*HISTORY OF IDEAS 182b. Greek Political Thought: Homer to Plato

See Classics 107b.

HISTORY OF IDEAS 183a and b. Classical Sociological Theory

See Sociology 200a and b.

1st sem. Mr. Boime

2nd sem. Mr. Kecskemeti

HISTORY OF IDEAS 186b. Ideology and the Explanation of Belief

A study of the concept of ideology, centering on the transformation of Marxism from a critique of European society in the 1840's into the ideology of Soviet society, with an emphasis on the philosophical and methodological problems that arise in the course of explaining the vicissitudes of a belief.

Mr. MacIntyre

HISTORY OF IDEAS 187a. Socialism and Revolution

See Politics 190a.

Mr. Raymond

*HISTORY OF IDEAS 188a. Socialism and Zionism

An historical survey of the links between socialism and Zionism from the mid-nineteenth century to the present.

HISTORY OF IDEAS 188bR. Studies in the Literature of Nineteenth Century Social Criticism

See English 178a.

Mr. Hoblitzelle

HISTORY OF IDEAS 189aR. Culture and Society: Literary-Social Criticism and Social Theory in the Nineteenth Century

See English 173b.

Mr. Goldberg

HISTORY OF IDEAS 189b. Contemporary Political Theory

See Politics 191b.

Mr. Kelly

HISTORY OF IDEAS 190. Heresy and Dissent

An historical survey of religious and secular forms of rebellion and of their relationships to the established order.

Mr. Dediğer

*HISTORY OF IDEAS 285b. Studies in the History of Socialism

*HISTORY OF IDEAS 286b. Seminar: Kant, Hegel, Marx

See Politics 255b for description.

HISTORY OF IDEAS 300a and b. Readings in the History of Ideas

Staff

* Not to be given in 1970-71.



HISTORY OF IDEAS 400–410. Dissertation Research

Independent research for the Ph.D. degree.

- | | |
|---------------------------|--------------------------------|
| 400. <i>Mr. Aiken</i> | 405. <i>Mr. Diamandopoulos</i> |
| 401. <i>Mr. Altmann</i> | 406. <i>Mr. Halpern</i> |
| 402. <i>Mr. Berkowitz</i> | 407. <i>Mr. Izenberg</i> |
| 403. <i>Mr. Binion</i> | 408. <i>Mr. MacIntyre</i> |
| 404. <i>Mr. Black</i> | 409. <i>Mr. Lubasz</i> |

History of Ideas Colloquium

The History of Ideas Colloquium meets monthly to hear and discuss papers and reports presented by members of the faculty and visitors.

Attendance is required of all students.

Mathematics

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An

essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The department has available a variety of fellowships and scholarships for well qualified students. To be considered for such financial support the student should submit application by February 1, 1971.

Faculty

Professor ROBERT T. SEELEY, *Chairman*: Singular Integrals, Partial Differential Equations.

*Professor MAURICE AUSLANDER: Commutative and Homological Algebra.

***Professor EDGAR H. BROWN, JR.: Algebraic Topology and Differential Topology.

Professor DAVID A. BUCHSBAUM: Algebra and Homological Algebra.

Visiting Ziskind Professor SAMUEL GITLER, (Fall Term): Topology.

Professor HAROLD LEVINE: Differential Topology and Singularities of Differential Maps.

Professor JEROME LEVINE, *Graduate Student Adviser*: Differential Topology, Knot Theory.

Professor TERUHISA MATSUSAKA: Algebraic Geometry.

Professor RICHARD S. PALAIS: Differential Topology and Global Analysis.

*Professor HUGO ROSSI: Functional Analysis, Complex Geometry, Several Complex Variables.

Visiting Professor JEAN-LOUIS VERDIER. *National Science Foundation Senior Foreign Scientist Fellow*: Algebraic Geometry.

Associate Professor ALAN MAYER: Algebraic Geometry.

Associate Professor PAUL MONSKY: Algebraic Geometry.

Assistant Professor ALDRIDGE BOUSFIELD: Topology.

Assistant Professor DAVID LIEBERMAN: Algebraic Geometry.

Assistant Professor MICHAEL SHUB: Differentiable Dynamical Systems.

Lecturer and Research Associate DAVID EISENBUD: Algebra.

* On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance on the General Examination which is normally taken by all degree students at the beginning of their second year.
4. Proficiency in reading French, German, or Russian.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the first year courses.
4. Successful completion of the qualifying examination.
5. Doctoral dissertation approved by the department.
6. Final examination consisting of the defense of dissertation.
7. Proficiency in reading French and German, or Russian.

Program of Study. The normal first year of study consists of Mathematics 101, 111, 121. The student may elect to substitute higher level courses for one or more of these on the basis of his preparation. He should discuss this possibility with his adviser. The second year's work ordinarily will consist of three higher level courses, one of which should be a seminar (Mathematics 291, 292, 293 or one of the informal research seminars). Students admitted to candidacy for the Ph.D. will begin work in the third year toward a dissertation. This might include advanced courses and seminars as well as Mathematics 400. Ordinarily, the dissertation will be in the major subject of the qualifying examination.

Qualifying Examination. The student will be examined on topics within two of the general areas: algebra, analysis and topology. Some time during his second year he should obtain the written consent of two faculty members to serve as major and minor examiner. (Forms are available in the Mathematics Department Office.) The minor examiner may choose to require knowledge of the syllabus for his subject, but the major examiner will, in addition, demand understanding of more advanced topics. The form and the time of the examination will be determined by the participants; ordinarily it will be oral.

Admission to Candidacy. To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have done well in his first year courses, must have successfully completed his qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

Dissertation and Defense. The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

The 100, 200, and 300 courses meet three hours per week for the entire year and carry six credits.

MATHEMATICS 101a and b. Algebra I

Groups, rings, fields, Galois theory, representations and modules.

Mr. Matsusaka

MATHEMATICS 111a and b. Analysis I

Fundamental existence theorems for several real variables, manifolds and Riemann surfaces.

Mr. Mayer

MATHEMATICS 121a and b. Topology I

Set theory, topological spaces, function spaces and covering spaces. *Mr. Brown*

MATHEMATICS 140. Real Analysis

Abstract metric spaces, completion, Banach spaces, Hilbert space. Measure theory in Euclidean space, L^p spaces, Fourier transforms. The Fredholm alternative, eigenfunction expansions for self-adjoint compact operators. Applications to ordinary differential equations. (If the class has the necessary background, some methods from complex variables may be used. The second semester may be influenced by the inclinations of the class, for example, in the following directions: abstract measure theory, the spectral theorem in Hilbert space, Haar measure, the theory of distributions.)

Mr. Seeley

MATHEMATICS 201a and b. Algebra II

Function fields and commutative rings.

Mr. Eisenbud

MATHEMATICS 202a and b. Algebraic Geometry I

Introduction to algebraic geometry.

Mr. Monsky

*MATHEMATICS 203a and b. Algebraic Number Theory I

In the first part of the course the ring of integers in a number field will be studied; possible topics for the second part include quadratic forms, class-field theory and the arithmetic theory of elliptic curves.

*MATHEMATICS 204a and b. Homological Algebra I

Derived functors, spectral sequences.

*MATHEMATICS 211. Analysis II

Singular integral operator on L^p spaces, for Euclidean space and for manifolds, with applications to the study of elliptic partial differential equations on manifolds with or without boundary. Further topics to be selected by the instructor.

* Not to be given in 1970-71.

MATHEMATICS 212a and b. Functional Analysis

Locally convex spaces. Krein-Millman and Hahn-Banach theorems. Operators on Hilbert and Banach spaces. Banach algebras. Applications to Fourier series and other topics. *Mr. Palais*

MATHEMATICS 221a and b. Algebraic Topology I

Homology theory and homotopy theory, including topics such as obstruction theory, the Serre spectral sequence, and the Steenrod algebra. *Mr. Bousfield*

***MATHEMATICS 222a and b. Differential Geometry**

Lie groups and symmetric spaces.

***MATHEMATICS 250a and b. Riemann Surfaces and Algebraic Curves**

A combined topological, analytic and algebro-geometric approach to the subject.

MATHEMATICS 291. Algebra Seminar

Mr. Buchsbaum

MATHEMATICS 292. Analysis Seminar

Staff

MATHEMATICS 293. Topology Seminar

Mr. Gitler

MATHEMATICS 302a and b. Algebraic Geometry II

Algebraic curves and abelian varieties.

Staff

MATHEMATICS 312a and b. Topics in Complex Variables *Mr. Lieberman****MATHEMATICS 315. Pseudo-Differential Operators****MATHEMATICS 320a and b. Introduction to the Mathematics of Quantum Field Theory and Elementary Particle Physics**

This course will treat basic topics in this area from a more mathematically sophisticated point of view than is customary, emphasizing group theoretic and algebraic ideas. *Mr. Hermann*

MATHEMATICS 321a and b. Algebraic Topology II*MATHEMATICS 322a and b. Differential Topology**

A study of differentiable manifolds. Imbedding theorem, cobordism, Smale's handlebody theory and surgery. *Mr. J. Levine*

MATHEMATICS 332a. Introduction to Global Analysis*MATHEMATICS 333. Foundations of Global Analysis**

This course will consist of topics chosen from the qualitative and metric theories (e.g., stability theory and ergodic theory) of ordinary differential equations and other Lie group actions on differentiable manifolds. Differential topology or geometry should be taken concurrently if the student does not have a familiarity with the elementary notions of differential topology. Examples of topics chosen might be: Structural Stability, Smale's Ω -stability Theorem, ergodic properties of normally hyperbolic systems or the integral manifolds in the n -body problem. *Mr. Shub*

MATHEMATICS 401–416. Research

Independent research for the Ph.D. degree.

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|---------------------------|---------------------------|
| 401. <i>Mr. Auslander</i> | 409. <i>Mr. Palais</i> |
| 402. <i>Mr. Brown</i> | 410. <i>Mr. Rossi</i> |
| 403. <i>Mr. Buchsbaum</i> | 411. <i>Mr. Seeley</i> |
| 405. <i>Mr. H. Levine</i> | 413. <i>Mr. Mayer</i> |
| 406. <i>Mr. J. Levine</i> | 414. <i>Mr. Lieberman</i> |
| 407. <i>Mr. Matsusaka</i> | 415. <i>Mr. Bousfield</i> |
| 408. <i>Mr. Monsky</i> | 416. <i>Mr. Shub</i> |

Mediterranean Studies

Objectives

The graduate program in Mediterranean Studies aims at inducting the student into the investigation of major problems involving the meeting of different peoples in and around the Mediterranean Sea, where Western civilization was first created and then developed. The instruction will train the student to master the primary sources as he learns the broad synthesis. Master of Arts as well as Doctor of Philosophy candidates are expected to show a grasp of the problem as a whole, as well as the ability to work in a variety of different sources. Doctor of Philosophy candidates will be required to demonstrate also a capacity for original research.

The scope of the department embraces Mediterranean developments from Antiquity and down to, but not including Modern Times. Students will be trained in history and archaeology as well as in the languages and literatures.

While it is desirable for the student to know as many of the key languages as possible in advance, no student is expected to come ideally equipped with complete linguistic preparation. If a course requires the use of a source that the student has not studied, he will ordinarily be permitted to enroll, provided that he is concurrently taking a basic language course to make up the deficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area.

Students planning to enter this department should take as much Hebrew, Greek and Latin as possible during their undergraduate course of study. They should also make every effort to achieve a sight reading knowledge of French and German before embarking on graduate work.

Faculty

Professor CYRUS H. GORDON, *Chairman*: Cuneiform, Egypto-Semitic, and Mediterranean studies.

Professor ERNEST R. LACHEMAN: Cuneiform studies.

Visiting Professor EDWARD ZARUDZKI: Archaeological geophysics.

Associate Professor LOUIS V. ZĀBKAR: Egyptian language and archaeology.

Assistant Professor GORDON D. NEWBY: The Islamic Mediterranean.

Assistant Professor IAN A. TODD: Mediterranean archaeology.

Degree Requirements

Master of Arts

Program of Study. Each candidate for the Master's degree is required to complete satisfactorily not less than twenty-four semester hours of course work in the department, plus any courses outside the department that the major professor may prescribe. The candidate must also show a command of either Latin or Greek, and of Hebrew or Arabic, plus at least one other Oriental language (such as Akkadian, Ugaritic, or Egyptian).

Language Requirement. A reading knowledge of one modern foreign language (ordinarily French or German) is required.

Qualifying Examinations. The student must demonstrate, in written and oral examinations, proficiency in the sources of two major areas of the program and an ability to synthesize them. A broad grasp of the Mediterranean origins of Western Civilization will be required of all candidates, beyond the specific topics covered in courses.

Doctor of Philosophy

The requirements are the same as for the Master of Arts degree, plus twenty-four additional semester hours of course work in the department, a reading knowledge of two modern foreign languages (ordinarily French and German), and a doctoral dissertation.

Admission to Candidacy. A student shall be eligible for admission to candidacy upon completing his language requirements and satisfactorily passing his written and oral examinations. Proficiency in those examinations must be demonstrated in three major areas of the program.

Dissertation and Defense. The dissertation should be a significant and original contribution to scholarship and should demonstrate a capacity for independent research based on primary sources. After submission of the dissertation, the candidate will be expected to defend it in a final oral examination.

Courses of Instruction

*MEDITERRANEAN STUDIES 100a. The Mediterranean in Antiquity

An orientation course covering the major historical developments that contributed to Western culture from the dawn of writing (ca. 3000 B.C.) to the appearance of Islam (7th century A.D.) The lectures will be supplemented by readings in ancient and modern historians.

MEDITERRANEAN STUDIES 100b. Introduction to the Islamic Mediterranean

The main developments from the Islamic Conquest to the Renaissance, stressing the interplay of European and Afro-Asiatic forces in the formation of the modern West. The lectures will be supplemented by readings in medieval and modern historians.

Mr. Newby

MEDITERRANEAN STUDIES 101a. Mediterranean Civilization and Its Influence on the Outside World

Lectures and discussions on the ancient Mediterranean as a creative cultural center with a virtually world-wide communications capability. The results of marine archaeology, outside influences on the Mediterranean and the emerging pattern of cultural diffusion that stimulated all high civilizations, are among the themes of the course.

In 1970-71 the Iron Age will be covered. Students may repeat Mediterranean Studies 101 for credit because the subject matter will change completely from year to year in a four year cycle.

Mr. Gordon

*MEDITERRANEAN STUDIES 102. History of Syria-Palestine

In 1968-69 the lectures and discussion will focus on the Middle Bronze Age with emphasis on the archaeological data upon which historic conclusions have been based.

*MEDITERRANEAN STUDIES 103a. Egyptian History

A one-hour course based on readings in Egyptian historical texts available in English translation, with a view to acquainting the student with the civilization and history of the Nile Valley.

MEDITERRANEAN STUDIES 108a. Literary History of the Mediterranean

An examination of the culture of the ancient Mediterranean through its literatures in translation. Texts will be supplemented with readings from various modern authors and historians.

Mr. Newby

* Not to be given in 1970-71.



MEDITERRANEAN STUDIES 109a. Cultural History of Mesopotamia

The institutions, daily life and material culture of Sumer, Babylonia and Assyria. *Mr. Lacheman*

MEDITERRANEAN STUDIES 109b. Mesopotamia and Canaan

A study of the influence exerted by Mesopotamia on the West with special reference to Old Testament problems.

While there are no specific prerequisites, it is desirable for the student to have a knowledge of Biblical Hebrew and the content of MEDITERRANEAN STUDIES 109a. *Mr. Lacheman*

***MEDITERRANEAN STUDIES 113a. Archaeology of Egypt**

The explorations and excavations. The art and monuments of Pharaonic Egypt. The instructor will emphasize the results of his own recent excavations and prepare the students for field work.

MEDITERRANEAN STUDIES 114a. Archaeology of the New Kingdom Egypt

In this course the art and architecture of the New Kingdom will be surveyed with an emphasis on the temples and tombs of the Theban area. *Mr. Zúbkur*

***MEDITERRANEAN STUDIES 115. Archaeology of Anatolia**

In 1969-70, the focus will be on archaeological problems related to the Hittites, in the framework of history, with special emphasis on the Bogazkoy excavations.

MEDITERRANEAN STUDIES 116a. Archaeology of Cyprus

Archaeology of Cyprus from the aceramic Neolithic period through the Late Bronze Age. *Mr. Todd*

MEDITERRANEAN STUDIES 116b. Archaeology of the Aegean

Archaeology of the Aegean from the aceramic Neolithic period through the Late Bronze Age. *Mr. Todd*

***MEDITERRANEAN STUDIES 118b. Physical Methods of Archaeological Research**

The techniques of locating sites and artifacts. The course will include a few lectures on the campus but most of the instruction will take place on boats equipped for locating wrecks and tunnels in Boston harbor. The students will be trained in the use of seismic profiling equipment, navigational systems, plotting and other procedures. A number of weekends will be spent at sea.

Open to students preparing for professional archaeological field work.

***MEDITERRANEAN STUDIES 123. Biblical Texts Pertaining to the Monarchy**

This course trains the student to control the Hebrew text linguistically and to use it for reconstructing the Mediterranean synthesis.

* Not to be given in 1970-71.

MEDITERRANEAN STUDIES 124a. Aramaic

Aramaic Incantation Bowls will be read and interpreted so as to bring out the role of magic in Talmudic Babylonia.

Prerequisite: A knowledge of Biblical Aramaic, or the Targumim or Syriac.

Mr. Gordon

MEDITERRANEAN STUDIES 124b. Mandaic

Magic Bowls of the Mandeans from Iraq and Iran will be read and discussed with a view to understanding gnostic and various pagan elements in late antiquity.

Prerequisite: Mediterranean Studies 124a.

Mr. Gordon

MEDITERRANEAN STUDIES 125. Classical Arabic Texts

This course is designed to induct the student into the use of Classical Arabic texts for historical studies.

Open to students beginning Arabic but also recommended for those with some previous knowledge of the language who need a methodical review.

Mr. Newby

*MEDITERRANEAN STUDIES 126. History and Sources of the Crusades

A study of the history of the Crusades as seen primarily through Near Eastern sources.

Prerequisite: A reading knowledge of Arabic.

MEDITERRANEAN STUDIES 130. Elementary Akkadian

A study of Ungnad's Grammar and readings of selected texts in cuneiform.

Mr. Lacheman

*MEDITERRANEAN STUDIES 136. Hittite

Grammar and interpretations of legal and ritual texts.

Prerequisite: The student must have taken or take concurrently Mediterranean Studies 130.

MEDITERRANEAN STUDIES 138a. Elementary Ugaritic

Grammar and poetic texts in C. H. Gordon's *Ugaritic Textbook*, 1967, will be read with constant reference to biblical and classical literature.

Students may take this course for credit more than once since the tablets read in class will not repeat those studied in former years.

Prerequisite: A knowledge of biblical Hebrew.

Mr. Gordon

*MEDITERRANEAN STUDIES 139. Advanced Ugaritic

MEDITERRANEAN STUDIES 140. Elementary Egyptian

A study of Middle Egyptian based on Gardiner's and other grammars. The principal texts to be read will be those included in Sethe's *Lesestücke* and de Buck's *Readingbook*. In the second semester some Middle Egyptian hieratic will be read.

Mr. Zābkar

*MEDITERRANEAN STUDIES 141. Late Egyptian Stories

The hieroglyphic texts of *The Misadventures of Wenamon* and *Horus and Seth* will be read with emphasis on grammar and basic interpretation.

• Not to be given in 1970-71.

***MEDITERRANEAN STUDIES 151. Hesiod and the Epic Cycle**

Readings in the Greek texts with reference to Helleno-Semitic relations.

Prerequisite: A reading knowledge of Greek.

MEDITERRANEAN STUDIES 152b. Greek Historians

Book I of Diodorus of Sicily will be read and discussed in the light of Egyptian archaeological and historical records.

Prerequisites: A knowledge of Greek.

Mr. Zābkar

***MEDITERRANEAN STUDIES 153. The Minoans and Mycenaeans**

Seminar discussions will be based on readings of ancient Bronze Age texts including Linear A and B.

Prerequisites: A reading knowledge of Hebrew and Greek.

MEDITERRANEAN STUDIES 161b. Lucius Septimius

Dictys Cretensis will be read with reference to the light it sheds on the Epic Cycle and on the problem of Eteocretan.

Prerequisite: A knowledge of Latin.

Mr. Gordon

MEDITERRANEAN STUDIES 217. Archaeological Seminar

Archaeological techniques, methods and problems designed for graduate students who expect to be associated with expeditions or who will have to work with excavated material; emphasis will be placed on Near Eastern archaeology but methods and problems of archaeology in other regions will be included. The subjects covered include techniques of field survey and excavation, surveying, photography, treatment and publication of material, the application of scientific techniques to archaeology, etc.

Mr. Todd

MEDITERRANEAN STUDIES 225. The Qur'an and its Commentaries

Selected readings from the Qur'an and various commentaries. Attention will be given to both traditional and modern Qur'anic exegesis.

Open to students with a reading knowledge of Classical Arabic or by permission of the instructor.

Mr. Newby

MEDITERRANEAN STUDIES 233b. Akkadian Texts from the West

In 1970-71 the Akkadian tablets from Ugarit will be analyzed with reference to the Mesopotamian impact on the Levant.

Prerequisite: Mediterranean Studies 130.

Mr. Gordon

***MEDITERRANEAN STUDIES 234. Akkadian Contracts, Letters and Diplomatic Texts**

Cuneiform texts will be read with analysis of dialect, style and historic significance.

Prerequisite: Mediterranean Studies 130.

MEDITERRANEAN STUDIES 235. Sumerian

Grammar and reading of cuneiform texts.

Prerequisite: Students must be taking or have passed Mediterranean Studies 130.

Mr. Zābkar

* Not to be given in 1970-71.

MEDITERRANEAN STUDIES 241a. Historical Inscriptions of the 18th Dynasty

Historically significant inscriptions of the 18th Dynasty will be read from *Urkunden* and correlated with the political and cultural history of the New Kingdom.

Prerequisite: Mediterranean Studies 140.

Mr. Zábkar

MEDITERRANEAN STUDIES 241b. Hieroglyphic Inscriptions of the Ptolemaic-Roman Period

The inscriptions dealing with the myth of the "divine birth" and the "divine nature" of the pharaoh recorded on the Ptolemaic-Roman temples will be read in this course.

Prerequisite: Mediterranean Studies 140.

Mr. Zábkar

*MEDITERRANEAN STUDIES 242a. Hieratic Late Egyptian

A variety of literary and historic documents aimed at inducting the student into hieratic script and the peculiarities of Late Egyptian.

Prerequisite: Mediterranean Studies 140a and b.

*MEDITERRANEAN STUDIES 242b. Advanced Late Egyptian

The reading of texts selected for special literary, historical or economic problems.

Prerequisite: Mediterranean Studies 242a.

*MEDITERRANEAN STUDIES 244a. Coptic

Saidic biblical texts will be selected from the Old and New Testaments, and studied with special attention to morphology, syntax and historic development from Late Egyptian.

MEDITERRANEAN STUDIES 300–304. Directed Readings in Mediterranean Studies

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|--------------------------|-----------------------|
| 300. <i>Mr. Gordon</i> | 303. <i>Mr. Newby</i> |
| 301. <i>Mr. Zábkar</i> | 304. <i>Mr. Todd</i> |
| 302. <i>Mr. Lacheman</i> | |

MEDITERRANEAN STUDIES 400–405. Dissertation Research

Independent research for the Ph.D. degree.

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|--------------------------|-----------------------|
| 400. <i>Mr. Gordon</i> | 403. <i>Mr. Newby</i> |
| 401. <i>Mr. Zábkar</i> | 404. <i>Mr. Todd</i> |
| 402. <i>Mr. Lacheman</i> | |

Music

Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.



Three general fields of study are offered in music:

1. *Musical Composition*. This program leads to the degree of Master of Fine Arts.
2. *Musical Composition and Theory*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.
3. *History of Music*. This program leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in all three.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in Musical Composition or Musical Theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in the History of Music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. This work should be submitted together with the formal Application for Admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application. Before registering, new students are given an advisory examination, results of which aid the department in course placement.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the department between March 1 and March 15. Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Associate Professor PAUL H. BRAINARD, *Chairman*; Professors ARTHUR BERGER, ***HAROLD SHAPERO, SEYMOUR SHIFRIN; Associate Professors *MARTIN BOYKAN, ROBERT L. KOFF, CALDWELL TITCOMB, LEO TREITLER; Assistant Professors LOUIS S. BAGGER, EDWARD COHEN (*Student Adviser*); Instructor JOSHUA RIFKIN; Lecturers JOEL COHEN, MADELINE FOLEY; Consultants MAYNARD GOLDMAN, EUGENE LEHNER, GEORGE ZILZER.

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the Music faculty).

A reading knowledge of a language from Group A is normally required of all applicants for admission to a graduate program in music.

Candidates for the Master's degree specializing in Musical Composition must possess a reading knowledge of two of the above languages, of which at least one must be from Group A. (The combination of Italian and Spanish will not be approved).

Candidates for the Master's degree specializing in Musical Theory or in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the Music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements. Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program is completed in two academic years. Students

* On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

should take no more than four full courses in any one year. It is suggested, however, that students pursue no more than three full courses during the year in which they take general examinations and submit a thesis.

Examinations. Early in March of their first year of study, graduate students will be expected to pass an examination in the standard literature of music from the early eighteenth century to the present. Upon admission, each candidate will receive a list of works to guide his listening.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must pass with distinction written general examinations in theory and history, one of which will be their major field, the other their minor field.

Thesis. Candidates for the degree of Master of Fine Arts in Music are required to submit a thesis. For candidates in Musical Composition this will consist of a musical composition, its scope to be approved by the Music faculty. For candidates in the History of Music or in Musical Theory and Composition it will be an analytical or historical study on a topic acceptable to the Music faculty. Part of this requirement in Musical Theory and Composition may be met by an original musical composition. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or April 1 for a June degree.

Doctor of Philosophy

Residence Requirements. A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates.

Language Requirements. Candidates for the Doctor's degree in Music must possess a reading knowledge of all three languages in Group A. In exceptional cases, the Music faculty may accept a language in Group B in lieu of Italian. Subject to the approval of the department, candidates in theory or composition may substitute for the third language courses in Mathematics, Physics, Philosophy or other disciplines.

Examinations. Candidates will be expected to pass with unusual distinction the written general examination for the M.F.A. After meeting their language and residence requirements they must pass the special oral qualifying examination.

Admission to Candidacy. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

Dissertation. Candidates for the degree of Doctor of Philosophy in the History of Music or in Musical Theory and Composition must submit an acceptable written dissertation on a subject approved by the Music faculty. In certain cases, and with the prior approval of the department, qualified candidates for the degree in Theory and Composition may meet a part of the dissertation requirement with an original composition. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and April 1 for a June degree of the academic year in which the Ph.D. degree is to be conferred.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his critical ability, and his effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

MUSIC 165a. Elementary Orchestration

The instruments of the orchestra; their construction, ranges and playing techniques, with a consideration of their use by major composers; the methods of writing effectively for present-day instruments, individually and in combination; the mechanics of reading and writing a score.

Written exercises, analysis of scores, study of recorded performances and live demonstrations.

Mr. Shapero

*MUSIC 168a and b. Renaissance and Baroque Keyboard Music

A survey of the literature for harpsichord and clavichord, including detailed study of the historical evolution of those instruments.

Given in alternate years.

*MUSIC 171a. History and Practice of Music Criticism

An examination of music criticism from the Baroque to the present day, with special attention to important nineteenth and twentieth century critics. Practical experience through the regular writing of reviews.

Prerequisite: A knowledge of music history and theory.

Given in alternate years.

* Not to be given in 1970-71.

***MUSIC 180b. Ethnomusicology of the American Negro and Others**

An introduction to the music of nonliterate peoples; folk music; and the music of non-Western high cultures, with particular emphasis on India and Japan.

Prerequisite: Music 162 (or the equivalent) or a course in anthropology.

Given in alternate years.

***MUSIC 194b. Problems in Cultural Historiography**

Readings and discussions concerning the conceptual foundations of historical study in the arts: the relation between history and criticism; the history and function of style-period concepts; evolutionary and developmental theories; modes of explanation in cultural history.

Prerequisite: Permission of instructor.

Given in alternate years.

MUSIC 197a. Tutorial in Music History and Literature

Guided reading and research in the history and literature of music.

Mr. E. Cohen

MUSIC 197b. Tutorial in Musical Analysis

Basic analytical problems of the music of the twentieth century, approached through detailed study of a few representative works.

Mr. E. Cohen

MUSIC COLLOQUIUM

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.*

Staff and Visiting Lecturers

MUSIC 200. Proseminar in Musicology

A survey of the principal subject matters, problems, and techniques comprising the discipline of Musicology.

Mr. Brainard

***MUSIC 201. Collegium Musicum**

Studies in music history through coordinated research and performance. Source and notational problems of selected historical examples will be treated in detail. Course members will be able to participate, together with members of the staff, in studio performances. Whenever possible, the course material will be integrated with that of one or more concurrent advanced courses in music history.

MUSIC 203a. Advanced Musical Analysis

Special analytic problems of structural interpretation with emphasis on total form and intrinsic relations. Intensive and detailed analysis of scores in terms of such considerations as the premises of the tonal system, Schenker's concept of musical unity, serial organization. Questions of methodology and terminology raised by the "new theory."

Mr. Berger

* Not to be given in 1970-71.

MUSIC 221. Seminar in the Music of the Middle Ages

Studies in the history of music from early Christian times through the end of the fourteenth century. *Mr. Treitler*

***MUSIC 222. Seminar in the Music of the Renaissance**

Studies in the history of music during the fifteenth and sixteenth centuries.

Music 221 and 222 will be offered in alternate years and both will incorporate systematic studies in the musical notations of their respective times.

MUSIC 223. Seminar in Baroque Music

Studies in historical developments in music of the seventeenth and eighteenth centuries. Typical full-year projects will include: the cantatas of J. S. Bach; seventeenth century keyboard music; history of cantata and oratorio in the seventeenth century; sonata, suite, concerto; Baroque opera. *Mr. Rifkin*

***MUSIC 224. Seminar in Pre-Classical and Classical Music**

Study of historical problems in the music of the middle and late eighteenth century. Sample topics include: transitional sonata forms through early Haydn and Mozart; Beethoven's sketch books; stylistic interactions among the Viennese Classicists; opera from Pergolesi to Mozart.

Given in alternate years.

MUSIC 225. Seminar in Romantic Music

Selected topics in music from Beethoven, Weber, and Schubert to Strauss, Mahler, and Sibelius. Some consideration will be given to Impressionism and to the relations between music and the other arts. *Mr. Titcomb*

MUSIC 226. History of Western Music Theory

A review of the recurring themes and issues of Western music-theoretical literature, from classical times to the end of the age of tonality. Selected writings will be studied in depth. *Mr. Treitler*

MUSIC 227. Proseminar in Theory and Composition

Technical projects in theory and composition; tonal forms and contrapuntal techniques.

Required of all first-year graduate students in theory and composition except under special circumstances. May be repeated for credit with permission of the instructor. *Messrs. Shapero (Fall Term) and Berger*

***MUSIC 228. Seminar in Twentieth Century Techniques**

Exercises in composition employing musical materials and organizational methods developed since about 1900, accompanied by analysis of works of composers from Debussy to the present.

MUSIC 233b. Topics in Analysis**MUSIC 246b. Stravinsky**

* Not to be given in 1970-71.

*MUSIC 260. Composition in Traditional Forms

The melodic phrase; types of accompaniment; studies in harmonic rhythm; trio forms, rondo forms, sonata forms, variation forms. Analysis and exercises.

*MUSIC 265b. Advanced Orchestration

*MUSIC 270a. Seminar in Serial Music

Detailed analysis of scores by Schoenberg, Webern, Boulez, Babbitt; methods of serial organization; relationship between serial procedures and general compositional problems such as phrase articulation and "harmonic movement."

MUSIC 292. Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided.

Messrs. Berger and Shifrin

*MUSIC 295a and b. Electronic Music

Composition, notation and recording of electronic music. Combined media. Studies for tape and instruments.

MUSIC 299a and b. Individual Research and Advanced Work

Individual research and advanced work in musical literature, musical history and in special problems of musical analysis, esthetics, theory and criticism. *Staff*

MUSIC 400-406. Dissertation Research

Required of all doctoral candidates.

400. *Mr. Berger*

404. *Mr. Shifrin*

401. *Mr. Boykan*

405. *Mr. Titcomb*

402. *Mr. Brainard*

406. *Mr. Treitler*

403. *Mr. Shapero*

Electronic Music Studios

Two studios with facilities for the composition of electronic music are available to qualified student composers.

Director: Mr. Shapero

Near Eastern and Judaic Studies

Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of the classical and modern Judaic civilization, and to do further research in these areas. This work is done mainly through study of the relevant languages and literatures and interpretation of historical sources.

* Not to be given in 1970-71.



Hiatt Students in Jerusalem

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department.

Faculty

Professor NAHUM M. SARNA, *Chairman*; Biblical studies. Dead Sea Scrolls.

Professor ALEXANDER ALTMANN: History of Jewish philosophy and mysticism. Medieval philosophy. Classical Bible commentaries.

Professor NAFTALI C. BRANDWEIN: Modern Hebrew literature.

Professor NAHUM NORBERT GLATZER: Jewish history. Literature of the Second Commonwealth. Hebrew historiography. Eschatology.

*Professor BENJAMIN HALPERN: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor MARSHALL SKLARE: Sociology of the Jewish community.

Associate Professor LEON JICK: Contemporary Jewish history.

Associate Professor DWIGHT W. YOUNG: Semitic languages and civilizations.

° On Leave, 1970-71.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Semitic Languages and Literatures (Akkadian, Arabic, Aramaic, Egyptian, Hebrew, Syriac).

History of Ancient Near East.

Islamic Studies.

Biblical Studies.

Jewish History.

Medieval Jewish Philosophy and Mysticism.

The Modern Near East.

Contemporary Jewish Studies.

Fields of study not listed here may be approved.

Degree Requirements

Master of Arts

Residence Requirements. The student is required to complete four full courses in the department. Programs of study are kept flexible; the department will consider the needs and interests of each student and advise him in outlining a program of study—this program may be modified later by the department. Students may be required to take courses given by other departments. A student who can, on admission, give evidence of satisfactory competence in one Semitic language or in one particular field of Near Eastern and Judaic Studies, will be able to complete the program for his degree in one year. Additional resident study may be required of less advanced students.

Language Requirements. Every candidate for the Master of Arts degree must show proficiency in one Semitic language, and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive his degree.

Examination. An oral examination is given at the conclusion of the student's residence. The examination is organized around two major subjects chosen from the fields of study undertaken by the student and is designed to test the student's knowledge in those subjects as well as his ability to relate his information to the large area to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

Thesis. In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required four courses.

Doctor of Philosophy

Residence Requirement. The residence normally required of a Ph.D. student who is the holder of an M.A. degree is one year (four courses); a longer residence will be required for part-time students and students holding teaching assistantships. The main emphasis, however, is placed on the students' individual research.

Language Requirements. A candidate for the Doctor of Philosophy degree in this area must show proficiency in two Semitic languages and in two modern foreign languages, as required by his special field of research. The candidate must satisfy his language requirements no later than at the completion of his required residence in the Graduate School.

Examinations. A written or an oral comprehensive examination in three areas of study (the scope being determined at a conference with the examining board) is given at the conclusion of the student's residence. A student who fails to pass the examination, or any part of it, may apply for a re-examination, which will take place not earlier than one semester after the date of the first examination.

Admission to Candidacy. A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree when he has fulfilled his residence requirements, when the subject and synopsis of his dissertation have been accepted by the department, when he has passed the comprehensive examinations, and fulfilled the language requirements.

Dissertation and Defense. The student will discuss his plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on his dissertation after the completion of his residence, i.e., as a nonresident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and his competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

Courses of Instruction

*NEJS 100b. The Bible in its Ancient Context

A study of selected texts (in English translation), utilizing related works, literary and religious, from the ancient Near East for comparison and contrast.

No language prerequisite.

NEJS 101. Basic Arabic

An introduction to literary Arabic. Drills in grammar, pronunciation and composition. Reading of graded classical and modern texts.

Open to students who have not previously had instruction in Arabic.

Mr. Dankoff

NEJS 102. Intermediate Arabic

Study of advanced grammatical and syntactical forms. Reading of related classical and modern texts. Drills in pronunciation and composition.

Prerequisite: NEJS 101 or its equivalent.

Mr. Dankoff

*NEJS 104b. Aramaic Dialectology: Biblical Aramaic

A study of the Aramaic portions of the Bible, and the contemporary Aramaic documents from Egypt with emphasis on grammar, and comparative and historical considerations.

NEJS 106a. Elementary Ugaritic

See Mediterranean Studies 138a.

Mr. Gordon

NEJS 107. Elementary Akkadian

See Mediterranean Studies 130.

Mr. Lacheman

*NEJS 108a. Comparative Grammar of Semitic Languages

*NEJS 109a. The Patriarchal Period in the Light of Near Eastern Documents

NEJS 110b. Problems in Biblical History

An intensive examination of crucial periods in the history of ancient Israel. Extra-biblical materials will be correlated with selected classical Hebrew texts.

Prerequisite: A reading knowledge of Hebrew.

Mr. Young

NEJS 114a. The Book of Amos

An intensive examination of textual and exegetical problems; the historical background; the leading ideas and concepts.

Prerequisite: Hebrew 10 or its equivalent.

Mr. Sarna

*NEJS 114a. Studies in the Biblical Cult

A comparative study of cultic material in the historical and prophetic books with special emphasis on features of the royally sponsored cults and prophetic attitudes toward ritual.

* Not to be given in 1970-71.

NEJS 117a. The Book of Job and the Problem of Evil

A reading of the Book of Job (in English translation) and a discussion of the role of the book in the literature and thought of the Western world; the problem of evil in Judaism and Christianity.

Mr. Glatzer

*NEJS 122a. Readings in Talmudic Literature

Selected texts designed to introduce the student to rabbinic language, technical terminology, ideas and concepts as illustrated by the study of representative passages from Talmudic texts.

NEJS 123a. Yehuda Ha-Levi's Kuzari

Analysis and interpretation of the Hebrew text.

Mr. Altmann

*NEJS 123b. Classical Biblical Commentaries II

Selected texts from the French and Spanish school of Jewish Commentators on the Prophets and Hagiographa.

NEJS 125b. Selected Texts from Genesis Rabba

A study of the earliest documents of Midrashic speculation on cosmological and kindred problems. Tracing of Hellenistic, especially Gnostic sources.

Mr. Altmann

NEJS 126b. The History of the Jews in Modern Times

The Jews of France under the *ancien regime*, the Revolution and the Napoleonic period. Topics in the French enlightenment and Jewish emancipation.

Mrs. Hoffman

*NEJS 135a. The Categories of the Spiritual Life in Jewish Neoplatonism

*NEJS 135b. Faith and Reason in Jewish Aristotelianism

NEJS 137. Hebrew Literature: Introduction to Medieval Hebrew Poetry

The Hebrew Golden Age of Spain especially the works of Shmuel Hanagid, Shlomo ibn Gabirol, Moshe ibn Ezra, and Yehuda Halevi.

Prerequisite: Permission of the instructor.

Mr. Segal

NEJS 139a. Major Trends in Modern Hebrew Literature

A critical study (in English) of two major streams, the traditional and rebellious, in modern Israeli poetry and prose by means of an analysis of themes, ideas, milieu and structure with emphasis on parallel motifs in European literature.

Mr. Brandwein

*NEJS 140a. History of the Jews in Antiquity and the Middle Ages

The organization and function of the Jewish community; intellectual developments and changes in religious doctrine; Messianic movements; the Jewish community in European economic life.

*NEJS 144a. Political Modernization in the Near East

The development of political institutions in the successor states of the Ottoman Empire. Critique of models of political modernization in the current literature of the region.

*NEJS 146b. Politics and Political Institutions in the Near East

Egypt and the Fertile Crescent, since World War II.

*NEJS 147a. The Ottoman Empire and the West

The political, economic and social structure of the Ottoman Empire and its relations with World powers, 1770–1920.

*NEJS 149b. Contemporary Social Change in Israel

Problems of modernization and development; methods of research. Seminar.

NEJS 160a. The American Jewish Experience, 1654–1885

A survey of American Jewish history from the earliest settlement to the consolidation by the nineteenth century German Jewish immigrants of their social, economic and ideological patterns.

Mr. Jick

NEJS 160b. The Emergence of the American Jewish Pattern, 1880 to the Present

The impact of mass immigration from Eastern Europe beginning in the 1880's. The emergence of the institutions, ideologies, life styles, and cultural norms which constitute the American Jewish pattern.

Mr. Jick

NEJS 163a. The Sociology of the American Jew

The individual, the in-group, and the majority society; minority group personality development; the Jewish family; patterns of self-segregation, acculturation, and assimilation; religion in American society and in the life of the individual Jew.

Mr. Sklare

NEJS 164b. Jewish Communal Structure and Organization

The role of the subcommunity in American society; Jewish communal services in medieval and modern times; contemporary American Jewish communal forms; religion, community relations, overseas aid, social welfare, and relationships with Israel.

Mr. Sklare

NEJS 166a. Modern Jewish Intellectual History to 1870

Jewish ideologies and movements from the Enlightenment to the rise of political anti-Semitism.

Mr. Silberstein

NEJS 166b. Modern Jewish Intellectual History since 1870

Jewish ideologies and movements from the rise of political anti-Semitism to the present.

Mr. Silberstein

NEJS 168a. The Culture of East European Jewry

A survey of social and ideological trends and an introduction to the literature and folklore of East European Jewry.

Mr. Goldsmith

*NEJS 168b. The Literature of the Holocaust

The ordeal of European Jewry during the second World War as reflected in memoirs, diaries, fiction, poetry, and historical and psychological writing.

* Not to be given in 1970–71.

NEJS 171b. Trends and Values in Yiddish Literature

A study (in English) of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem. *Mr. Goldsmith*

*NEJS 172a. Seminar Yiddish Literature: Mendele Mokher Seforim, Sholom Aleichem and Y. L. Peretz

Representative works of each author will be studied together with selected criticism.

*NEJS 172b. Seminar in Yiddish Literature: The Works of H. Leivick

Leivick's dramas, poetry, essays and addresses against the background of modern Jewish history and the trends in 20th century Yiddish literature of Europe and America.

NEJS 173a. Seminar in Yiddish Literature: American Yiddish Poetry

The leading figures and movements during the period from 1890 to 1940. Rosenfeld, Yehoash, Liessin, Reisen, M. L. Halpern and Mani Leib. *Mr. Goldsmith*

NEJS 173b. Seminar in Yiddish Literature: Contemporary Poetry

Among the poets whose work will be studied are Glatstein, Grade, Manger, J. I. Segal, Sutzkever and Zeitlin. *Mr. Goldsmith*

NEJS 204a. Topics and Problems in Jewish Education

See CJS 204a for description.

Mr. Arian

NEJS 204b. Conceptual Models for Jewish Education

See CJS 204b for description.

Mr. Arian

NEJS 223b. The Dead Sea Scrolls: The Manual of Discipline

To be read in the original, with special attention to the historical background, religious teachings and social organization of the sect. Linguistic features will be emphasized. A seminar. *Mr. Sarna*

*NEJS 224b. History of the Biblical Text

A study of the growth of the biblical text and the ancient versions of the Bible.

NEJS 225b. North-West Semitic Inscriptions

A seminar in Hebrew, Phoenician and Moabite inscriptions from the biblical period. The texts will be read in their original script. Special emphasis will be placed on linguistic, literary, religious and historical features. *Mr. Young*

NEJS 226. Biblical Texts in the Light of Ancient Near Eastern Civilization

A study of selected biblical passages against the background of cognate texts from the ancient world.

Prerequisite: A reading knowledge of Hebrew and Akkadian.

Mr. Young

NEJS 235. Readings in Jewish Education

See CJS 235 for description.

Mr. Arian

NEJS 236b. Selected Texts from Jewish Mystical Literature

The texts concerned are from the Hekalot, sefer Yezira, Bahir, the Gerona circle, the Zohar and the thirteenth century Kabbalists.

Mr. Altmann

NEJS 238b. A History of Ideas in Modern Hebrew Literature

A seminar covering a history of ideas as reflected in the writings from the Enlightenment to the establishment of the state of Israel.

Mr. Brandwein

*NEJS 256a. The Second Jewish Commonwealth

Source studies in the history and culture of Palestine from 538 B.C. to 70 A.D.

*NEJS 266a. Topics in the History of the Jewish Enlightenment and Emancipation

A seminar.

Prerequisites: NEJS 166a or its equivalent. Reading knowledge of Hebrew and German or French.

NEJS 280a. Moses Mendelssohn and the Enlightenment

Analysis of Mendelssohn's philosophy and of his interpretation of Judaism.

Mr. Altmann

NEJS 282. Problems in the Sociology of the American Jew

A seminar.

Mr. Sklare

NEJS 320-329. Reading Courses

Special tutorials for advanced graduate students.

320. Readings in Jewish History

Mr. Glatzer

322. Readings in Medieval Jewish Philosophy

Mr. Altmann

324. Readings in Modern Hebrew Literature

Mr. Brandwein

325. Readings in Biblical Texts

Mr. Sarna

*326. Readings in Islamic Civilization

327a. Readings in Syriac Literature

Mr. Young

*329. Readings in Modern Near East and Modern Jewish History

NEJS 400-406. Dissertation Colloquium

Independent research for the Ph.D. degree.

400. *Mr. Altmann*

403. *Mr. Young*

401. *Mr. Glatzer*

404. *Mr. Brandwein*

402. *Mr. Halpern*

405. *Mr. Sarna*

406. *Mr. Sklare*

* Not to be given in 1970-71.

Philosophy

Objectives

The graduate program in philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

Admission

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate program in philosophy should have had at least one year of history of philosophy and at least one course in logic.



Faculty

Professor HENRY D. AIKEN: Ethics. American philosophy. Social philosophy.

Professor PETER DIAMANDOPOULOS: History of ancient philosophy. History of science.

***Professor JOHN VAN HEIJENOORT: Logic. History of logic. Foundations of mathematics.

Professor ALASDAIR MACINTYRE: Ethics. Social theory. History of philosophy.

Visiting Professor SIDNEY MORGENBESSER: Philosophy of science. Theory of knowledge. Value theory.

Professor FREDERIC T. SOMMERS: Philosophy of Language. Metaphysics. History of philosophy.

Professor MORRIS WEITZ: Philosophy of art and literature. Analytical philosophy.

Assistant Professor RICHARD BURIAN: Philosophy of science.

Assistant Professor ROBERT S. GREENBERG, (*Student Adviser*): Theory of knowledge.

Degree Requirements

All programs will be worked out in consultation with the student's adviser.

Master of Arts

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full-time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination.
4. Demonstration of proficiency in either French *or* German.

Doctor of Philosophy

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination with distinction.
4. Demonstration of proficiency in either French *or* German.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the department.
7. Successful defense of the dissertation.

*** On Leave, Spring Term, 1970-71.

Program of Study. Each student will be assigned a tutor who will advise him on his course of study and guide him in his preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second year student may not take more than two semester reading courses in the 300 series; these must also be approved by his adviser and the department chairman.

Qualifying Examination. The qualifying examination is given each September, and the student is required to take it at the end of his first full year of residence. A single comprehensive test will be set, divided historically into three periods: (1) up to A.D. 1500, (2) 1500–1870, (3) since 1870. Candidates are, however, expected to use the examination as an occasion for dealing with the questions raised in an analytical manner, and for developing ideas of their own, rather than for repeating factual information about the history of philosophy. Credit will accordingly be given for analytical power and for original ideas, as much as for a grasp of the historical points at issue.

For each historical period, set books will be named early in the academic year preceding the examination. While candidates are required to show general familiarity with the development of philosophy in each of the three periods, they are required to make a particularly close study of two of the books named for each period. Three or four texts will be named for each period, covering a range of topics in (e.g.) metaphysics, epistemology, logic, ethics and social philosophy, from which the candidate will choose two texts for special study. Specialized texts in (e.g.) mathematical logic or philosophy of religion will occasionally be named, without prejudice to candidates concentrating in other areas of philosophy. All examinations must be passed with distinction within thirty months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

Language Requirement. A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of his first year in residence and must meet the language requirement no later than the beginning of his fifth term in residence. Language examinations will be given early in the fall and spring terms. The department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirements and when the subject of his dissertation has been approved by the department.

Dissertation Topic Oral Examination. To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his proposed topic.

Dissertation and Defense. When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend his dissertation.

Courses of Instruction

PHILOSOPHY 105a. Plato

An introduction to Plato's thought through an intensive reading of several major dialogues. Mr. Sommers

*PHILOSOPHY 105b. Aristotle

Lectures on Aristotle's views on Knowledge, Being, the Cosmos, the Soul, and human life. Extensive reading from *Organon*, *Metaphysics*, *Physics*, *De Anima*, *Ethics* and *Politics* will be required.

*PHILOSOPHY 107b. Medieval Philosophy

PHILOSOPHY 115a. Intermediate Logic

See Philosophy 15a.

Mr. van Heijenoort

PHILOSOPHY 116b. History of Modern Ethical Theory

A study of major moral philosophers in the modern period with special attention to Hume, Kant, Bentham, Mill and Bradley. Mr. Aiken

*PHILOSOPHY 117aR. Ethical Theory in the Twentieth Century

Readings in the works of twentieth century authors. Attention will be given to questions concerning the meaning of ethical terms, the nature and function of moral judgments, moral reasoning and principles, and concepts of volition and action as they pertain to problems of ethics.

PHILOSOPHY 119a. Theory of Knowledge

Such questions as the nature of truth, the reliability of sense perception, and the problem of a priori knowledge will be discussed. Mr. Sommers

* Not to be given in 1970-71.

***PHILOSOPHY 121a. Foundations of Mathematics**

Formal systems. Godel's theorems and consequences. Consistency proofs. Introduction to the theory of recursive functions. Hilbert's program and institutionalism.

PHILOSOPHY 124b. Concepts: Their History and Variety

A survey of the major historical theories of concepts and conceptualization with special emphasis on their relevance to contemporary theories of the nature and role of concepts in human culture. *Mr. Weitz*

***PHILOSOPHY 130aR. Philosophy of Logic**

An examination of the fundamental notions of logic. Signs and symbols. Sentences, statements, and propositions. Negation, implication, deductibility, logical consequence. Theory of descriptions. The relation of formalized logic to ordinary language.

PHILOSOPHY 131b. Legacy of Logical Positivism

An examination of some central tenets of logical positivism; the breakdown of the positivist program; current attempts to grapple with resultant difficulties. Emphasis will be placed on the notions of verification, truth, meaning and conceptual change. *Mr. Burian*

***PHILOSOPHY 132a. 19th Century Philosophy**

A critical review and discussion of selected texts including Hegel, Schopenhauer, Marx, Nietzsche, J. S. Mill, and Bradley.

PHILOSOPHY 133a. Bertrand Russell and G. E. Moore

An intensive examination of the major philosophical works of Russell and Moore, with special reference to Russell's logical atomism and Moore's doctrines of sense data. *Mr. Weitz*

***PHILOSOPHY 133b. Contemporary Analytic Philosophy**

A critical survey of leading men and movements in recent British and American philosophy.

PHILOSOPHY 134aR. The Continental Existentialists and Their American Counterparts

A consideration of selective topics from the works of Nietzsche, Kierkegaard, Sartre, James and Dewey. *Mr. Aiken*

PHILOSOPHY 135a. Philosophy of Literature

Philosophical problems as reflected in classics of literature, such as the Greek dramatists, Shakespeare, Voltaire, Tolstoy, T. S. Eliot and Proust. *Mr. Weitz*

PHILOSOPHY 136. Post-Kantian Idealism and Its Critics

Hegel's work will be contrasted with that of other German idealists, especially that of Fichte, and with the doctrines of the British idealists, Bradley, Green, and McTaggart. The Marxist existentialist and empiricist criticisms of Hegel will be considered.

Prerequisite: Philosophy 167a desirable but not required. *Mr. MacIntyre*

PHILOSOPHY 137a. Moral Theory and Moral Change

An examination of the relationship of philosophical theories about morality to the moral practice of society and to the historical explanation of moral change. Among the authors to whom special attention will be paid are Kant and Kierkegaard.

Mr. MacIntyre

PHILOSOPHY 138b. Ideology and the Explanation of Belief

See History of Ideas 186b.

Mr. MacIntyre

***PHILOSOPHY 140b. Philosophy of Science**

A critical discussion of major issues in the philosophy of science, including explanation, confirmation, scientific laws, and theories and special problems of the social sciences.

***PHILOSOPHY 141b. Three Classical Philosophical Problems**

A close analysis of a famous tradition of philosophical problems: the existence of God, the freedom of the will, and the question of the existence of life after death.

To be announced

PHILOSOPHY 143aR. Continental Rationalism

Intensive study of selected works of Descartes, Spinoza and Leibnitz.

Mr. Diamandopoulos

***PHILOSOPHY 143b. British Empiricism**

Intensive study of selected works of Locke, Berkeley and Hume.

PHILOSOPHY 144b. Marxism and Pragmatism

An analytical and historical exploration of leading Marxist theses, including the early manuscripts of the 1840's. These theses include the treatment of alienation, dialectical materialism and ideology in light of writings of pragmatists and current materialists.

Mr. Morgenbesser

PHILOSOPHY 145b. Human Action

Selected topics of intention, purpose, will, reason, and courses in action versus movement in human experience.

Mr. Weitz

PHILOSOPHY 147a. American Pragmatism and Education

A study of the main American pragmatists: Pierce, James and Dewey. Special attention given to their philosophies of education.

Mr. Aiken

PHILOSOPHY 148b. Philosophy of Social Sciences

An analysis of leading concepts and principles of the social sciences, especially economics, psychology and sociology and a comparison of the social and physical sciences.

Mr. Morgenbesser

***PHILOSOPHY 150a. Wittgenstein**

Intensive study of *Philosophical Investigations*, with preliminary examination of earlier works.

* Not to be given in 1970-71.

***PHILOSOPHY 151a. Social and Political Philosophy: Individuals, Groups and Communities**

An analysis of the fundamental concepts of groups and individuals in social and political theory and a discussion of problems of relations of groups and individuals. Among problems and concepts to be discussed are responsibilities of individuals to groups, the nature of collectivity, the concept of community and the concept of an individual. Reference will also be made to the special historical communities, "experimental communities," such as the Paris commune, several American utopian communities of the 19th century and the Israeli kibbutzim.

To be announced

***PHILOSOPHY 152b. Philosophy of History**

A study of leading problems in the theory of history; relativism, determinism, explanation, and objective historical knowledge. Analysis of several leading philosophers of history: Marx, Collingwood, and Popper.

***PHILOSOPHY 153a. Empiricism versus Rationalism**

A re-examination of several issues which are traditionally considered the source of the rationalist empiricist controversy. Special attention will be given to the problem of innate ideas and the origins of knowledge.

To be announced

PHILOSOPHY 154. Tragedy

See Theater Arts 151 for description.

Mr. Matthews

PHILOSOPHY 156bR. Philosophy of Mind

An examination of selected current topics, including the concept of willing, intentionality, and the mind-body problem.

Mr. Burian

***PHILOSOPHY 157aR. Philosophy of Language**

Nature and uses of language, theories of meaning, and predication.

PHILOSOPHY 158a. Experience, Substance and Identity

An analytical investigation of certain problems in the area of metaphysics. Reference will be made to traditional as well as contemporary philosophers. Discussion will focus on the role of experience in the resolutions of problems.

Mr. Greenberg

PHILOSOPHY 160b. Linguistic Philosophy

Examination of critical linguistic methods in analytic philosophy.

Mr. Sommers

***PHILOSOPHY 167a. Kant**

A contemporary analytic approach to certain problems in the *Critique of Pure Reason*.

PHILOSOPHY 171a. Frege

An intensive study of major themes in Frege's philosophy. Philosophy 15a or 115a not a prerequisite but would be of great value in taking this course.

Mr. van Heijenoort

• Not to be given in 1970-71.

PHILOSOPHY 200. Pro-Seminar
Required of all first year students.

Staff

*PHILOSOPHY 203b. Seminar in Rationalism

PHILOSOPHY 230a. Seminar in Classical Logic

Mr. Sommers

PHILOSOPHY 300-306. Readings in Philosophy

300a and b. Mr. Aiken

303a and b. Mr. Greenberg

301a and b. Mr. Burian

305a. Mr. van Heijenoort

302a and b. Mr. Diamandopoulos

306a and b. Mr. MacIntyre

PHILOSOPHY 400-408. Dissertation Research

Independent research for the Ph.D. degree.

400. Mr. Sommers

405. Mr. van Heijenoort

401. Mr. Aiken

406. Mr. Weitz

403. Mr. Diamandopoulos

407. Mr. Greenberg

404. Mr. Burian

408. Mr. MacIntyre

Physics

Objectives

The graduate program in physics is designed to equip the student with a broad understanding of all major fields of physics and to train him to carry out independent original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence by the student of his knowledge, understanding and proficiency in classical and modern physics, and in mathematics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:



Theoretical Physics: Quantum theory of fields; meson theory; quantum electrodynamics; elementary particle physics; general theory of relativity; nuclear physics; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state; the many-body problem; kinetic theory of ionized gases; plasma physics; theoretical astrophysics.

Astrophysics: Stellar constitution; stellar and galactic evolution; radiative transfer; cosmology and cosmogony; stellar mechanics; continuum mechanics.

Experimental Physics: Nuclear physics; high energy experimental physics, primarily work with bubble chambers on the properties of the strange particles; atomic and molecular beams; optical pumping; solid state physics; nuclear magnetic resonance; phase transition phenomena; low temperature physics.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor STANLEY DESER, *Chairman:* Quantum theory of fields. Elementary particles. General relativity.

Professor STEPHAN BERKO: Experimental nuclear and solid state physics. Positron interactions in solids.

Professor JACK S. GOLDSTEIN, *Director, Astrophysics Institute:* Astrophysics. Radiative transfer. Stellar interiors.

* * Professor EUGENE P. GROSS: Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Professor EDGAR LIPWORTH: Atomic and molecular beams. Optical pumping. Lasers.

Professor HOWARD J. SCHNITZER: Nuclear theory. Elementary particle theory.

Professor SILVAN S. SCHWEBER: Quantum theory of fields. Elementary particle physics. Quantum theory of multiparticle systems.

Associate Professor MAX CHRÉTIEN: Experimental high energy physics. Elementary particles.

* * Associate Professor MARCUS T. GRISARU: Field theory. Mathematical physics. Elementary particles.

- Associate Professor PETER HELLER: Solid state experimental physics.
- Associate Professor HUGH N. PENDLETON III: Elementary particles. S-matrix theory. Quantum theory of atoms, molecules and solids.
- Assistant Professor DANIEL AMIT: Theoretical many body and low temperature physics.
- Assistant Professor H. DANIEL COHEN: Experimental physics at low temperatures. Liquid helium.
- Assistant Professor JACQUES COHEN: Computer science. Programming languages. Non-numerical algorithms.
- Assistant Professor IRA H. GILBERT: Statistical mechanics of stellar systems.
- Assistant Professor CHRISTOPH HOHENEMSER: Experimental atomic and nuclear physics.
- Assistant Professor LAWRENCE KIRSCH: High energy experimental physics.
- Assistant Professor ROBERT V. LANGE: Theoretical many body and solid state physics.
- Assistant Professor ALLEN P. MILLS: Experimental atomic physics. Positronium.
- Assistant Professor ROBERT PERRIN: Quantum electrodynamics. Particle physics.
- Assistant Professor ALAN T. RAMSEY: Experimental atomic physics.
- Assistant Professor PETER SCHMIDT: High energy experimental physics.
- Assistant Professor ROBERT STEIN: Stellar evolution. Fluid dynamics. Solar corona. Magnetohydrodynamics.
- Instructor BRIAN W. MURRAY: Positron annihilation in metals and alloys.



Degree Requirements

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

Master of Arts

1. One year's residence as a full-time student.
2. Eighteen semester hours of advanced courses in physics.
A thesis on an approved topic may be accepted in place of a semester course.
3. Reading knowledge of French, German, or Russian.
4. Satisfactory performance in the General Examination.

Doctor of Philosophy

1. Two years' residence as a full-time student.
2. Twenty-seven semester hours of advanced courses in physics.
3. Reading knowledge of two foreign languages chosen from French, German and Russian. (Italian may be substituted for French.) A knowledge of computer programming may be substituted for a *second* language.
4. Outstanding performance in the General Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
6. Doctoral thesis and final oral examination.

Program of Study and Course Requirements. Normally, first year graduate students will elect lecture courses from the 100 series; second year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

A student may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that he obtained an honor grade in these courses.

Residence Requirements. A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the Master's requirements.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Language Examinations. The language examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The computer programming examination consists of three parts:

In Part 1 a student is given a problem which will require a reasonably complete knowledge of Fortran and some non-trivial logic. The student will be expected to know how to punch the cards, assemble the program ("debug" if necessary), check correctness of calculation, etc., and present printed results to the examining committee.

In Part 2 the above procedure is repeated on a different problem; however, SPS programming must be used.

Part 3 consists of an oral examination in which the student should demonstrate a general knowledge of computers (their usefulness, logical and memory capacity speeds, etc.).

For further information concerning the computing examination, consult the Director of the Computer Center.

General Examination. The General Examination consists of an oral examination administered by a faculty committee and should be taken by all degree students by the end of their third term. One language examination must be taken before the General Examination.

The General Examination is designed to test whether a student has understood and integrated the material of his undergraduate and first year graduate studies. It consists of a series of an examination in depth, in two subjects agreed upon in advance. Its contents are not related to particular lectures at Brandeis. To prepare for the General Examination the student is advised to consult the graduate adviser as early as possible. Satisfactory grades, or the equivalent, in Physics 100a, 101a and b, 102a and b, and 110a and b are prerequisites to the examination.

The General Examination should be taken before the *fourth term* of study at Brandeis. Qualified students are encouraged to take it earlier. Students with a Master's degree from another university *must* take it within a year after entering Brandeis.

Outstanding performance on the General Examination qualifies a student for a Master's degree and allows him to present himself for the Advanced Examinations. Satisfactory but not outstanding performance qualifies a student for the Master's degree. The student may present himself, within a year, for re-examination on those parts of the General Examination in which his performance was not outstanding. In the case of unsatisfactory performance a student may either be asked to withdraw from the University or he may be allowed, within a year, to take the General Examination again.

Advanced Examination. The Advanced Examination is designed to test the student's knowledge and abilities in his chosen field of research. After

passing the General Examination, the student begins work with an adviser who guides his research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The adviser will work out a program of study to familiarize the student with current research in his field and to explore possible dissertation topics. The Graduate Committee of the Physics Faculty will then appoint a dissertation committee, to which the student must submit a written progress report at the end of each term. The student's dissertation adviser will be the chairman of the dissertation committee. The Advanced Examination will cover the student's field of research, as well as closely related topics, and will be taken on a date set by the adviser within three terms of passing the General Examination. It will be administered by the dissertation committee, which will determine its content and form (written or oral). Depending upon the recommendation of his adviser and his performance in the Advanced Examination, the committee will recommend the student for admission to candidacy for the doctorate, allow him a second attempt, or request him to withdraw from the University.

Dissertation and Final Oral Examination. The doctoral dissertation must represent a piece of original research of a standard acceptable to a faculty committee (dissertation committee) appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to his dissertation research.

Courses of Instruction

PHYSICS 100a. Theoretical Mechanics

Mechanics of point systems. Lagrangian and Hamiltonian methods. Small vibrations. Transformation theory. Integral invariants. Kinematics and dynamics of rigid bodies. Perturbation theory. Relativistic mechanics. *Mr. Gilbert*

*PHYSICS 100b. Continuum Mechanics

The mechanics of continuous media. Hydrodynamics; non-linear phenomena; shock waves.

PHYSICS 101a and b. Electromagnetic Theory

Electrostatics, magnetostatics, boundary value problems. Maxwell's Equations. Quasi-stationary phenomena. Radiation. *Mr. Perrin*

PHYSICS 102a. Quantum Mechanics

A critical review of the experiments leading to the quantum hypothesis measurements and their quantum mechanical descriptions. Observables and states. Quantum logic. Quantum kinematics and dynamics. *Mr. Schweber*

* Not to be given in 1970-71.

PHYSICS 102b. Quantum Mechanics

Application of quantum mechanics. Description of the properties of atoms, molecules and simple solids. Perturbation theory and elementary scattering theory.
Mr. Schweber

PHYSICS 103a. Statistical Physics

Review of thermodynamics; statistical postulates; microcanonical ensemble; Maxwell-Boltzman distribution. Thermodynamic laws; canonical distribution; grand canonical ensemble; specific heats and magnetic susceptibilities in non-interacting systems. Bose systems; Brownian motion; Einstein theory; Perrin experiments; Nyquist-Johnson noise; fluctuation-compliance theorem; correlation functions. Transport theory. Mean field theories of cooperative phenomena.

Mr. Heller

PHYSICS 103b. Atomic and Nuclear Structure

A survey course of the systematics of elementary atomic and nuclear structure. The intent of the course is to supply a background for such courses as astrophysics and atomic physics. Original papers will be used to supplement the lectures. The approach is more experimental than theoretical.

Prerequisite: Physics 102a or the equivalent.

Mr. Ramsey

***PHYSICS 104b. Solid State Physics**

Thermal, electric and magnetic properties of solids. Lattice vibrations. Specific heat. Band theory of solids. Fermi surface.

PHYSICS 109a and b. Advanced Laboratory

Mr. Berko

PHYSICS 110a. Mathematical Physics

Linear vector spaces: matrices, operators, Hilbert spaces. Orthogonal functions. Probability theory. Complex variables. Boundary value problems.

Mr. Goldstein

PHYSICS 113b. First Year Tutorial

Mr. Gross

PHYSICS 200a and b. General Relativity

Introduction to current research and problems in gravitational physics. Physical and mathematical background will be provided as needed, but emphasis will be on recent literature. Active participation by students in discussing the latter will be expected.

Mr. Deser

***PHYSICS 201a and b. Advanced Many Body Physics**

Non-relativistic field theory applied to solids and other many body systems. Applications to transport phenomena and phase transitions. Phenomenological models and their relationship to microscopic theory.

PHYSICS 202a and b. Advanced Quantum Mechanics

Formal theory of scattering. Elementary quantization of radiation field. Quantum theory of multiparticle systems. Green's function.

Mr. Schnitzer

* Not to be given in 1970-71.

***PHYSICS 203a and b. Elementary Particle Physics**

An introduction to the phenomenology of elementary particle physics. Theoretical approaches to the dynamics of strongly-interacting elementary particles. Dispersion relations, symmetries, and current algebras.

PHYSICS 204a and b. Solid State Physics

The course will begin with a conventional introduction to solid state physics covering topics in crystal structure, lattice vibrations, band structure and transport theory. Selected topics in Fermi surfaces, magnetism, superconductivity, and phase transitions will be discussed in terms of modern experimental and theoretical techniques. From time to time members of the faculty and students will discuss topics relating to ongoing research in the department. *Messrs. Berko and Lange*

***PHYSICS 205b. Atomic Physics**

Microwave spectroscopy, NMR, masers, lasers. Optical pumping.

***PHYSICS 207a and b. Plasma Physics**

Electrodynamics and statistical mechanics of classical plasmas: the dielectric tensor, dispersion relations, fluctuation-dissipation theorem, dynamics of a test particle in a plasma, and plasma kinetic equations.

***PHYSICS 208a and b. Astrophysics**

Hertzprung-Russell diagram. Classification of stellar systems. Physics of stellar interiors. Radiative transfer problems. Abundances of the elements. Stellar models. Physics of the interstellar medium. Origin of cosmic rays.

PHYSICS 209. Laboratory Seminar

Analysis of some important recent experiments.

Mr. Berko

PHYSICS 211b. High Energy Physics

Introduction to the properties of elementary particles. Relativistic kinematics. Experimental determination of the quantum numbers of particles. Interactions, symmetries and conservation laws. Weak interactions, selection rules.

Mr. Kirsch

***PHYSICS 212b. Selected Topics in Experimental Solid State Physics**

The choice of topics will depend on the research interests of the students and instructor. Included will be diffraction studies of lattice vibrations, cyclotron resonance studies of metals, and neutron scattering studies of magnetism.

PHYSICS 213. Tutorial in Physics

Messrs. Grisaru and Lange

***PHYSICS 214a and b. Stellar Structure and Evolution**

Observations of stellar properties. General features of stellar structure and evolution. Physics of stellar interiors: nuclear reactions, absorption of radiation, convection, equation of state. Calculation of stellar models. Results on static and dynamic stages of stellar evolution.

° Not to be given in 1970-71.

PHYSICS 215a and b. Interstellar Medium

Constituents of the interstellar medium. Emission and absorption of radiation. Gas dynamics. Kinetic theory of plasmas. Waves in magnetoplasmas. Cosmic rays. High energy radiative processes. *Mr. Stein*

***PHYSICS 216a. Stellar Atmospheres**

Radiative transfer in stellar atmospheres. Rates of radiative and collisional processes determining atomic states. Theory of line formation. Applications to analysis of stellar spectra.

PHYSICS 217b. Statistical Stellar Dynamics

The equilibrium states, stability, and normal modes of disc-like and spherical stellar systems will be treated. Collisional effects will be discussed with special emphasis upon the influence of collective processes. *Mr. Gilbert*

***PHYSICS 301a and b. Topics in Particle Physics**

The interaction of charges and radiation. Properties of elementary particles. Dispersion relations and symmetries.

PHYSICS 311a and b. Advanced Topics in Mathematical Physics*Research Courses**

PHYSICS 401. Experimental Atomic and Molecular Physics *Mr. Lipworth*

PHYSICS 402. Theoretical Atomic and Molecular Physics *Mr. Pendleton*

PHYSICS 403. Experimental Nuclear Physics
Messrs. Berko and Hohenemser

PHYSICS 404. Theoretical Nuclear Physics *Mr. Schnitzer*

PHYSICS 405. Experimental Elementary Particle Physics
Messrs. Chrétien, Kirsch and Schmidt

PHYSICS 406. Theoretical Elementary Particle Physics
Messrs. Deser, Grisaru, Pendleton, Schnitzer and Schweber

PHYSICS 407. Experimental Solid State Physics
Messrs. Berko, Heller and Hohenemser

PHYSICS 408. Theoretical Solid State Physics *Messrs. Gross and Lange*

PHYSICS 409. Relativity *Mr. Deser*

PHYSICS 410. Mathematical Physics *Messrs. Grisaru and Schweber*

PHYSICS 411. Statistical Physics *Messrs. Gross and Pendleton*

PHYSICS 412. Astrophysics *Messrs. Gilbert, Goldstein and Stein*

PHYSICS 413. Experimental Low Temperature Physics *Mr. H. D. Cohen*

* Not to be given in 1970-71.

Politics

Objectives

The graduate program in politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

Faculty

Professor ROY C. MACRIDIS, *Chairman*; Professors LAWRENCE H. FUCHS, ***WALTER LAQUEUR, MAX LERNER, PAULI MURRAY, *RUTH SCHACHTER MORGENTHAU, JOHN P. ROCHE, *I. MILTON SACHS, KENNETH N. WALTZ; Associate Professors **DONALD HINDLEY, **GEORGE A. KELLY, ERIC A. NORDLINGER, ***PETER WOLL; Assistant Professors ROBERT J. ART, MARTIN A. LEVIN, PETER NATCHEZ, O. RALPH RAYMOND II, LOIS WASSERSPRING; Lecturer ERNEST STOCK; Visiting Lecturer WILLIAM SCHNEIDER.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded after the successful completion of the qualifying examination by the candidate and a demonstration of proficiency in one language.

In special cases and with prior approval of the director of the graduate program, the M.A. may be awarded after the completion of the first year's residence. In order to do so, the first year student must show satisfactory work in all his courses and must either submit a thesis paper that is read and found adequate by two members of the Department, or take an oral examination, the contents of which will be decided on an *ad hoc* basis.

* On Leave, 1970-71.
 ** On Leave, Fall Term, 1970-71.
 *** On Leave, Spring Term, 1970-71.

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) the encouragement of field work in connection with dissertation research, (c) university teaching experience. Each student is assigned to a departmental adviser who will help him to plan his program of study.

Program of Study. The student must complete two years in residence and a minimum of thirty-six course credits. Each graduate student will be required to take three of the following five fields: American Government, Comparative Government, International Relations, Political Theory, and Methods and Methodology.

Within each of the three fields chosen, graduate students will be required to take a minimum of *two* formal courses. The standard work load for full-time students is at least three courses in each semester of their first year and at least two formal courses in each semester of their second year. As a rule, reading courses may be taken only after the completion of the student's first year. At the end of the first semester, entering students will submit a statement to the graduate adviser indicating their three fields of interest and the one in which they expect to do their dissertation. At the end of the first year, an informal examination will be given to test the general progress of the student and suggest his future work plan. The examination will relate primarily to the courses taken by the student. Normally, at the end of the second year a formal oral and written examination will be given covering the student's three fields but with emphasis on the sub-fields in which the student has done most of his work. Those passing the examination will be admitted to candidacy for the Ph.D. degree and will receive the M.A. degree.

Language requirements. By the end of his first year of study, the student must demonstrate proficiency in one approved foreign language. (Quantitative methods may be offered in lieu of one of the foreign languages.) Proficiency in a second language must be demonstrated before the end of the fourth semester in residence.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he has completed his residence requirement, has passed the qualifying examination, has fulfilled the language requirement and when the subject of his dissertation has been approved by the department.

Dissertation and Defense. The dissertation will be completed under the supervision of the student's adviser. It must be sponsored by a departmental committee of at least two members and have the approval of the graduate committee of the department. Twenty-four credits will be allowed for dissertation research. It is assumed that the writing of the dissertation will take at least one year. The student must successfully defend his dissertation at a final oral examination.

Fields and Sub-Fields. For the purpose of illustration, a list of sub-fields is given below. In each field, the student is expected to be familiar with pertinent theories and approaches.

A. Political Theory

1. Plato to the Puritan Revolution. The concepts and history of political thought covering the Greek, Hellenistic, Roman, Byzantine, Medieval, Renaissance, and Reformation periods.
2. Machiavelli to the Present. This overlaps with the previous category in the years 1500–1650. The overlap makes for more concrete areas of study.
3. Problems and Issues in Political Thought. To be arranged with the appropriate adviser. The purpose here is to allow the student some relief from the historical approach.

B. Methods and Methodology

1. Systems and Methods of Modern Political Analysis. This category includes social science methodology, applications of the philosophy of science, analytic philosophy.
2. Statistical and Other Quantitative Methods, Theory of Games, etc.

C. Comparative Politics

1. Comparative Political Institutions. Cross-national study of growth and functions of parties, legislatures, executives, bureaucracies, etc. Soviet Union and European Communist states; Western Europe (emphasis on France, England, Germany); Middle East and North Africa (i.e. Morocco to Iran, Israel); Sub-Saharan Africa; China, Japan, and Korea; South and Southeast Asia; Latin America; Canada, Australia, New Zealand, South Africa, and pre-World War II Commonwealth states.
2. Comparative Political Development. Emphasis on political, economic, and social processes of modernization in terms of comparative political systems.
3. Comparative Political Sociology. The explanation of political phenomena relying upon social, economic, and cultural factors.
4. Nationalism, Imperialism and Revolution. The student is responsible not merely for recent events but for the theory and history of all pertinent material.

D. American Government

1. Public Administration and Public Policy. Theory, historical development, institutions, functions and current practice of the American bureaucracy and related elements.

2. The Federal Government. The Presidency, Congress, the Federal Judiciary and their development and inter-relatedness as political structures.

3. Parties, Interest Groups, and Voting Behavior. The historical development and political sociology of the above, including a grasp of contemporary theoretical work.

4. Constitutional Law.

5. State and Local Politics. Including urban studies, regional political sociology, local parties, and relations of sub-governments with Washington.

E. International Relations.

1. Theories of International Relations.

2. Diplomacy and War. Special concentration on diplomatic history, the theory of negotiations, and the pursuit of political ends by military means.

3. Comparative Foreign Policy.

4. American Foreign Policy and National Security Policy.



Courses of Instruction

AMERICAN GOVERNMENT

*POLITICS 101a. Parties, Pressure Groups and Public Opinion

POLITICS 104a. The American Voter

This course will consider both historical and behavioral theories to explain individual voting decisions and to interpret the meaning of elections in American politics. Topics: the modernization of American political culture, electoral strategies, voter rationality, extremism and radical politics, and the consequences of electoral outcomes. *Mr. Natchez*

POLITICS 107a. The Politics of Public Policy

This course will examine the nature of public policy outputs of political subsystems in American government. The demands, supports, and structures of various subsystems will be analyzed to determine those factors that are most important in shaping public policy. *Mr. Woll*

POLITICS 113a. The American Presidency

An analysis of the nature and role of the American Presidency. The contemporary institution of the presidency will be examined, and its effectiveness discussed in terms of the requirements of the modern democratic state. The course will include discussions of the sources of presidential power, the constitutional basis of the presidency, the role of the Executive Office, the relationship between the Presidency and Congress, the Judiciary, and the bureaucracy. *Mr. Woll*

POLITICS 115a. History of American Constitutional Law and Theory

See History 166a.

Mr. Roche

POLITICS 115b. History of American Constitutional Law and Theory

See History 166b.

Mr. Roche

*POLITICS 116b. Civil Liberties in America

See History 155b.

*POLITICS 117b. American Political Thought

An exploration of the origins of American political thought and American political institutions in the colonial and the early national period.

POLITICS 118b. Ethnic Groups in the United States

The course will deal with the study and identification of major ethnic groups in the United States of America, their political cultures, and the manner in which they participate in the political process. *Miss Wasserspring*

POLITICS 119b. Communism in the United States

This course investigates native and foreign ideological and organizational inputs in the Communist Party of the USA, the Party's relationship to domestic issues, its links with the Communist International, and the source of its appeal. At pertinent points Soviet and Comintern political issues, influencing the conduct of the CPUSA, will also be discussed. *Mr. Raymond*

° Not to be given in 1970-71.

POLITICS 120a. Politics of Urban Areas

An analysis of the management of conflict in urban areas and its institutional (the distribution of authority and influence), demographic, and cultural setting. Special emphasis on the relationship between patterns of conflict management of urban governments and the public services provided by these governments, such as criminal justice, education, welfare and poverty programs. *Mr. Levin*

POLITICS 121a. Urban Policy Problems

An examination of the interrelated problems of class, race, poverty and social change in urban areas. Special emphasis on the public policies directed toward these problems. *Mr. Levin*

POLITICS 123b. The Politics of Urban Criminal Justice

Analysis of the behavior of police, prosecutors and trial court judges in urban areas. Special emphasis on the relationships between these officials and the political systems of the urban areas. Evaluation of these officials' behavior and especially its effect on their clients. *Mr. Levin*

***POLITICS 213b. Policy Formation**

A seminar. A study of aspects of policy making with reference to various organs of decision making in the Federal Government.

***POLITICS 214a. Urban and Community Problems**

This seminar examines government, politics and policy development in urban America.

POLITICS 215a. Selected American Social Theorists: Studies in the History of American Political and Social Theory

See History 215a.

Mr. Lerner

POLITICS 217b. Politics and Constitutionalism in America*POLITICS 218b. American Ethnic Politics**

An examination of the political acculturation of ethnic and religious groups including American Negroes. The course will be run as a workshop and students will be expected to conduct research on a particular group. The comparative approach will be used to help understanding of the nature of American political culture as well as the distinctive characteristics of each group. *Mr. Fuchs*

***POLITICS 219b. Policy-Making in Urban Areas**

An examination of the development in urban areas of policies relating to poverty, class, race, and the administration of criminal justice. Special emphasis on the political conflict generated in the development and the relationship of political decision-makers and social science "experts." *Mr. Levin*

POLITICS 220b. American Political Process

A seminar. Alternative causal models of American political behavior. Will include political participation, attitudes and opinion structures, voting behavior, and Congressional and Presidential policy formation. Some background in quantitative research is highly desirable. *Mr. Natchez*

See also Politics 168a and b, American Foreign Policy, listed under International Politics.

COMPARATIVE POLITICS

*POLITICS 126b. Political Change in the Near East

Comparative study of political change in Turkey, Egypt, Iran, and Israel. Emphasis will be on how institutional change in these countries can aid in the construction of theories of development. The political relations among these States will also be considered.

POLITICS 130a. The Political and Social Institutions of the Soviet Union

Beginning with a brief historical study of the Bolshevik revolution, this course will analyze the ideological and institutional sources of the Soviet state and party structures. Particular attention will be devoted to institutional development and its political, economic, and social causes and consequences. The final section will examine continuity and change in the post-Stalin period.

Mr. Raymond

POLITICS 132b. The Soviet Union and World Affairs

This course will examine Soviet foreign policy in the light of ideological and state considerations. The decay of world communism as a single power center, the phenomenon of "polycentrism," and the changing pattern of communist state relations with the West and with the underdeveloped world will be discussed.

Mr. Raymond

*POLITICS 140a. The Politics of Africa

Lectures and readings are supplemented by films. Topics covered include: changing approaches to the study of Africa; colonialism to nationalism, independence and pan-Africanism; ideology, including political ideas of Nkrumah, Padmore, Fanon, Memmi, Nyerere, Senghor and Toure; experiments in socialism, planning and economic development by the new nations. In depth study of several individual African countries.

*POLITICS 140b. Seminar in Contemporary African Politics

Prerequisite: Politics 140a.

POLITICS 144a. Politics of Northern Latin America

This course focuses on the elements of stability and instability in the region. Specific examination is made of the Mexican and Cuban revolutions, the aborted Guatemalan revolution of 1944-54, and the "maverick" constitutional democracy of Costa Rica.

Miss Wasserspring

POLITICS 144b. The Politics of Southern Latin America

The emphasis of this course is on the political development of Brazil and Argentina and on the origins, course and subsequent failure of the Bolivian revolution of 1952.

Mr. Hindley

***POLITICS 148a. Government and Politics: China and Japan**

An examination of the development of political thought and governmental institutions in modern China and Japan. The principal forces producing the Kuomintang and Communist revolutions in China; the Chinese Nationalist and Chinese Communist states; constitutional development and political parties in Japan from the Meiji restoration to the present.

POLITICS 150a. Government and Politics: Southeast Asia

An introduction to major aspects of the political development of Southeast Asia in the modern period: the impact of Western colonialism, the nationalist struggles, the post-independence attempts to establish viable political systems, communism, and intervention from outside the region. Specific attention is given to Vietnam, Thailand, Malaysia, and Indonesia.

Mr. Hindley

***POLITICS 152b. Government and Politics: South Asia**

An introductory study of the peoples, political thought, and governmental institutions of South Asia (India, Pakistan, and Ceylon).

POLITICS 154b. Politics of European Integration

This course will deal with the theory of integration and the particular pattern of European cooperation and integration in the Common Market. The role of political parties, trade unions, business associations and the resulting integrative political institutions will be studied.

Mr. Macridis

POLITICS 156b. European Political Systems

This course will deal in depth with parties, ideologies, and governmental institutions of European countries, with particular emphasis on Britain, France, and Germany.

Mr. Macridis

POLITICS 157a. Working Class Politics in Europe

The development of working class consciousness and political participation in Western Europe. Topics include: the growth of workers' parties and trade unions; the workers' involvement in the French and Russian Revolutions, and the Spanish Civil War; the elites' strategies for dealing with the workers' political demands; syndicalism and the general strike; the attraction of communist, socialist, and fascist parties; and the political consequences of social mobility and the new affluence.

Mr. Nordlinger

POLITICS 157b. British Politics

A study of British history in terms of the typical problems of political modernization countries. Modern British politics is examined in terms of elitism, class relations, voting behavior, pressure groups, party ideologies, parliamentary institutions, and policy making.

Mr. Nordlinger

***POLITICS 158b. Political and Social Thought in Contemporary Germany (1918-1970)**

This seminar will discuss in depth political developments in Germany since the end of World War I and the establishment of the Weimar Republic, the fall of the Republic, and the politics of the Nazi regime will be examined in detail, together with the subsequent developments.

* Not to be given in 1970-71.

*POLITICS 160a. Political Parties

POLITICS 161b. Colonialism and Imperialism

The course will deal with the political and some of the economic characteristics of colonialism and imperialism and some of its most pervasive manifestations today.

Miss Wasserspring

POLITICS 163b. The Study of Revolution

An historical examination of different types of revolution, their causes, the ideologies of revolutionary movements, strategies for fighting internal wars, and the relative desirability of bringing about social and economic change in a violent or reformist manner.

Mr. Nordlinger

POLITICS 164a. Comparative Foreign Policy

The course will deal with a discussion of the underlying factors shaping foreign policy and a detailed discussion of the foreign policy of some of the major powers including the United States and the Soviet Union.

Mr. Macridis

*POLITICS 203a. Comparative Politics

The study of comparative politics: a critical appraisal of the major approaches that have been used by comparative political scientists, such as political, cultural, elite studies and structural functional analysis, and an evaluation of the hypotheses found within these broad approaches.

POLITICS 232b. Political Change

This seminar will deal with a comparative analysis of the factors that account for political change and will examine, with specific illustrations and case studies, the contemporary literature on political development.

Mr. Hindley

*POLITICS 233b. French Political Institutions

This course will discuss in depth selected topics in contemporary French politics.

*POLITICS 236b. Questions of Nationalism and Communism in Southeast Asia

This seminar will examine problems related to the politics of Southeast Asia.

*POLITICS 238aR. Selected Problems in African Politics

Advanced individual research into the contemporary political problems of selected African countries. Emphasis will be on the use of primary material.

*POLITICS 239b. Selected Topic on Asian Politics

A research seminar including consideration of the following: nationalism and communism in Southeast Asia; regionalism in Southeast Asia, political development in Asia; and the role of the military and political parties.

POLITICS 240a. Political Sociology

The influence of social structure, economic change and culture upon such political phenomena as voting behavior, styles of participation, the distribution of power, political integration, and violence.

Mr. Nordlinger

INTERNATIONAL POLITICS

POLITICS 168a. American Foreign Policy

An historical analysis of these American foreign policy strategies: isolationism, imperialism, collective security, balance of power, and containment. The effects of foreign pressures and domestic politics on these strategies will be considered. The course will focus on the period 1890 to 1950.

Mr. Art

POLITICS 168b. American Foreign Policy

A post-World War II analysis of American foreign policy. The course will focus on three areas: how foreign policy decisions have been made, how they have been implemented, and what effects they have had. Substantive areas, such as containment in Europe and Asia, nuclear deterrence, alliance management, and foreign aid will be examined to illustrate the dilemmas confronting a superpower.

Mr. Art

POLITICS 169b. The Military-Industrial Complex

Relevant material from microeconomic theory, bureaucratic theory, the sociology of the military profession, deterrence theory, and political science will be used to generate hypotheses about the existence, causes, nature, and effects of this phenomenon. These hypotheses in turn will be tested against empirical data.

Mr. Art

*POLITICS 170a. International Organization

A survey of international organizations as they relate to the main themes of contemporary international relations: the maintenance of peace and security; arms control and disarmament; decolonization; human rights and racial problems; international trade and economic development; and monetary instability.

POLITICS 172b. Contemporary International Politics

A discussion of such factors and problems as the origins of the Cold War, Soviet and American foreign policy, nuclear strategy, and internal war as they influence the pattern of international politics.

Mr. Nordlinger

POLITICS 174a. Problems of National Security

An examination of alternate political, military and economic strategies for securing national interests; a discussion of selected crises in American foreign policy since 1945.

Mr. Waltz

*POLITICS 178b. International Politics in the Pacific Area

Analysis of the forces underlying international relations in the Pacific area in the twentieth century. Topics include: Soviet-Asian policies, the strategic position of the emergent Southeast Asian states, Sino-Japanese conflict, America's stake in Asia, Communist China's foreign policy; prospect for peace in the Pacific.

*POLITICS 204b. International Politics

An examination of approaches, concepts, and theories in the field of international politics.

* Not to be given in 1970-71.

POLITICS 254b. Contemporary Theories in International Relations

A seminar addressed to an examination of international structures and their effects on national behavior. *Mr. Waltz*

See also Politics 154b, Politics of European Integration; 161b, Colonialism and Imperialism; and 164a, Comparative Foreign policy.

POLITICAL THEORY AND METHODS

*POLITICS 182a. Political Thought from Plato to Rousseau

An examination of major political theories in the context of the intellectual climate of their day. Subjects considered will include: Greek thought, the medieval heritage, the humanist renaissance, the Reformation and the Enlightenment.

*POLITICS 186b. Political Philosophy of the Enlightenment

*POLITICS 187a. Liberalism as Political Force and Idea

An examination of the genesis, rise, supremacy and eclipse of liberal politics, with primary emphasis on the twentieth century. The role of mass society, industrialization, war, technology, and adversary ideologies will be considered. Focus on structures as well as theories.

POLITICS 190a. Socialism and Revolution

An analysis of the relationship between socialist and revolutionary thought beginning with the liberal revolutionary tradition of the French Revolution and continuing through the various branches of Marxism. *Mr. Raymond*

POLITICS 191b. Contemporary Political Theory

Aspects of Western political theory and its cultural milieu, from Nietzsche to the present. Including Sorel, the neo-Machiavellians, Weber, Bolshevism, Fascism, democratic socialism, existentialism, neo-Marxism, neo-Catholicism, neo-positivism, Freudianism, and linguistic analysis. *Mr. Kelly*

POLITICS 192b. Empirical Political Science

The course will consider the usefulness of various theoretical models (systems theory, functionalism, data analysis paradigms) insofar as they increase our capacity to explain political data. It will require into the construction and testing of causal theories. Emphasis will be put upon the use of qualitative and quantitative evidence through an intensive, critical analysis of selected issues: political stratification and mobility, ideology, violence, reform, consensus and legitimacy and others. *Mr. Schneider*

*POLITICS 195a. Research Methods and Techniques

Problems of measurement, survey research, computer analysis of data, cost-effectiveness in research. New techniques of political research and information handling will be discussed in some depth. Methods for evaluating social and political change will be treated.

POLITICS 250a. Statistical Ideas and Research

See Social Welfare 231a. *Mr. Kurtz*

* Not to be given in 1970-71.



POLITICS 252b. Advanced Psychological Statistics

See Psychology 210b.

Mr. Frederiksen

*POLITICS 255b. Seminar: Kant, Hegel, Marx

A close examination of major political and related writings of Kant, Hegel, and Marx with special attention to their philosophical and sociological importance. Some other writings briefly treated. Informal class reports. No language requirements, but German or French would be very useful.

See also Politics 117b, American Political Thought.

POLITICS 301-316. Readings in Politics

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|--------------------------|-------------------------------|
| 301. <i>Mr. Art</i> | 309. <i>Mrs. Morgenthau</i> |
| 302. <i>Mr. Natchez</i> | 310. <i>Mr. Nordlinger</i> |
| 303. <i>Mr. Fuchs</i> | 311. <i>Mr. Raymond</i> |
| 304. <i>Mr. Hindley</i> | 312. <i>Mr. Roche</i> |
| 305. <i>Mr. Kelly</i> | 313. <i>Miss Wasserspring</i> |
| 306. <i>Mr. Lerner</i> | 314. <i>Mr. Sacks</i> |
| 307. <i>Mr. Levin</i> | 315. <i>Mr. Waltz</i> |
| 308. <i>Mr. Macridis</i> | 316. <i>Mr. Woll</i> |

POLITICS 400-415. Dissertation Research

Independent research for the Ph.D. degree.

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|--------------------------|-------------------------------|
| 400. <i>Mr. Art</i> | 408. <i>Mrs. Morgenthau</i> |
| 401. <i>Mr. Natchez</i> | 409. <i>Mr. Nordlinger</i> |
| 402. <i>Mr. Fuchs</i> | 410. <i>Mr. Raymond</i> |
| 403. <i>Mr. Hindley</i> | 411. <i>Mr. Roche</i> |
| 404. <i>Mr. Kelly</i> | 412. <i>Miss Wasserspring</i> |
| 405. <i>Mr. Lerner</i> | 413. <i>Mr. Sacks</i> |
| 406. <i>Mr. Levin</i> | 414. <i>Mr. Waltz</i> |
| 407. <i>Mr. Macridis</i> | 415. <i>Mr. Woll</i> |

° Not to be given in 1970-71.

Psychology

Objectives

The graduate program in psychology leading to the degree of Doctor of Philosophy is designed for students of promise in the field of general psychology including theoretical, historical and experimental studies and research projects. Courses and seminars in special areas, such as physiological psychology, are offered to all graduate students, but no specialized training or special degrees are given. Graduate programs reflecting a balanced exposure to diverse areas in the field of psychology are arranged by the student in consultation with his faculty adviser and are reviewed by the department faculty.

All regular graduate students pursue programs leading to the Ph.D. degree. The Ph.D. program includes fulfilling the requirements for the degree of Master of Arts, which are (a) the successful completion of a year of graduate work, (b) the demonstration of reading proficiency in one foreign language, (c) the completion of a Master's thesis, and (d) passing an oral or written qualifying examination in the area of the thesis or one of the regularly scheduled qualifying examinations. Candidates for the degree of Master of Arts only are not admitted. Special students, who are not candidates for a degree, may occasionally be admitted; such admissions are for one year and may be renewed upon petition.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required, although it will be favored. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Preference will be given to students who have completed, in addition to basic courses in theoretical and experimental psychology, a broad liberal arts program with some training in the natural and social sciences. Students will be admitted on a competitive basis which will include evaluation of previous academic record and the results of the Graduate Record Examinations (Advanced, Aptitude and Profile Tests), and the Miller Analogies Test.

Faculty

Professor RICARDO B. MORANT, *Chairman*: Experimental psychology. Developmental psychology. Perceptual mechanisms. Sensation and perception.

Professor EUGENIA HANFMANN: Clinical psychology. Personality theory.

Professor BRENDAN A. MAHER: Experimental clinical psychopathology.

Conflict. Language.

Professor HARRY RAND: Clinical practice and training.

Professor MARIANNE L. SIMMEL: Sensory physiology. Cognitive processes.

Perception.

Associate Professor MAURICE HERSHENSON: Perception. Developmental theory.

**Associate Professor JAMES B. KLEE: Motivation and emotion. Symbolic and cognitive processes. Human and animal learning.

*Associate Professor JEROME WODINSKY: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor JOHN FREDERIKSEN: Mathematical psychology.

Assistant Professor RICHARD KATZ: Non-verbal communication. Personality.

Assistant Professor JAMES LACKNER: Human experimental psychology. Psycholinguistics.

Assistant Professor JOSEPH LITVEN: Personality. Social and child psychology.

Assistant Professor HARVEY LONDON: Social psychology. Group dynamics.

Assistant Professor LESLIE McARTHUR: Social psychology. Interpersonal attraction.

Assistant Professor SIDNEY STECHER: Psychophysics. Experimental psychology. Sensory psychophysiology.

Assistant Professor ARTHUR WINGFIELD: Human memory. Cognitive processes. Experimental psychology.

Adjunct Lecturer DONALD B. GIDDON: Physiological psychology. Psychosomatic relations.

Lecturer JOHN W. SENDERS: Statistics.

Degree Requirements

Doctor of Philosophy

Program of Study. Although there is a two year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during his residency. The normal program for each of the four years is noted on Page 166.

* On Leave, 1970-71.

** On Leave, Fall Term, 1970-71.

First Year

Observation and Research Strategies in Psychology (Psychology 200a and b); Advanced Psychological Statistics (Psychology 210a and b); Master's Level Readings for Propositional Review (Psychology 230b); two seminars or courses at the 100 level or above the first semester and one the second semester.

Second Year

Master's Research (Psychology 250–262); three seminars or courses at the 100 level or above each semester. Readings in Psychological Literature (Psychology 290–299) may be taken one semester as one of the seminars or courses. Depending upon teaching obligations (teaching for more than one semester) a student may petition the department to postpone one semester-seminar until the third year.

Third Year

Advanced Research (Psychology 400–408) or Master's Research (Psychology 250–262); Advanced Level Readings for Propositional Review (Psychology 240); one seminar in each semester. Two seminars during the first semester if a seminar or course was postponed from the second year.

Fourth Year

Advanced Research (Psychology 400–408). Students may register for additional courses or seminars with the permission of the department. Courses or seminars may be audited with the permission of the instructor. Courses or seminars in other departments may be taken for degree credit after the first year. Permission of the instructor and the Psychology Department is required.

Departmental Colloquia. Students are expected to attend departmental colloquia during their four years of residence.

Individual Research. Each student is expected to engage in research each semester with the aim of developing competence in its planning, practice, and evaluation.

Teaching. To develop competence in teaching, each student is ordinarily expected to teach during one semester of each academic year. Teaching will normally begin during the second year.

Evaluation of Proficiency. During the first three years, students are expected to demonstrate competence in each of the following areas of psychology:

a. *General Areas:*

1. History and Systems
2. Statistical Methods

b. *Special Areas:*

Group A:

1. Sensation and Perception
2. Learning and Thinking
3. Physiological and Comparative Psychology

Group B:

4. Personality and Motivation
5. Psychopathology and Clinical Psychology
6. Child and Social Psychology

Each area has a standing committee of three appointed by the department chairman at the beginning of each academic year. Each student may nominate any member of the faculty as committee chairman of the area in which he is to be examined or do a proposition defense. If the student's nominee is a member of the standing committee, a fourth member will be appointed by the department chairman. If the examination or proposition review cuts across more than one area, the department chairman will appoint an *ad hoc* committee in consultation with the student and the committee chairman of his choice.

Competence may be demonstrated by examination, proposition or literature review, or successful completion of an appropriate seminar numbered 200 or higher. In at least four of the eight areas, competence must be demonstrated by passing a qualifying examination. At least two of these qualifying examinations must be written and the remaining four by examination on a written proposition. Competence in Statistical Methods must be demonstrated by written examination or successful completion of Psychology 200a and b.

Although a grade of B- will be acceptable for academic credit, a grade of B or higher in a seminar will be required to demonstrate area competence.

Examinations may be written or oral at the student's option. They may be taken separately, and are offered in October, January and May. Students should register for examinations they wish to take three weeks before the scheduled date. Reading lists are provided for each area, and a designated faculty member is available for consultation concerning preparation for any examination. If the student chooses to demonstrate competence by an examination instead of a propositional or literature review, Psychology 230b or Psychology 240 may be taken as reading courses. Although evaluation is continuous, all students will be informed of the faculty's evaluation of their progress and performance at the end of each year. Transfer students from other graduate programs or students with exceptional undergraduate preparation may petition the department for modification of the ordinary schedule

of courses, seminars and examinations noted above. Marginal performance in more than one course, seminar or examination, or inability to keep pace with the program may be considered grounds for severance.

Master's Thesis. A Master's thesis should be submitted by the end of the second year. By petition to the department an extension may be granted. The Master's thesis is written under the supervision of one member of the faculty. A second reader, chosen by the chairman in consultation with the faculty sponsor, must recommend the thesis for its acceptance by the department.

Language Requirement. Reading proficiency in at least one foreign language is required. This language must be one in which substantial psychological literature exists. Language examinations are offered by the department four times a year, usually in September, December, February and May. Students are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of his first year of study will not be eligible for financial aid from the university for the second year.

Admission to Candidacy. A student may be admitted to candidacy for the doctorate when he has fulfilled the above requirements.

Dissertation and Defense. Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the department, a dissertation committee of three or more members will be appointed by the department chairman, including the dissertation sponsor as chairman of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the department faculty.

The student may, if he wishes, ask the department for *formal acceptance* of his prospectus. A prospectus that is to be formally accepted must provide a detailed outline of the experimental work to be done (if any) and of its theoretical basis. Such a prospectus will be voted upon by all members of the department. Once the department has formally accepted a prospectus, it will consider itself bound to accept the resulting dissertation as well, regardless of the experimental results, provided that the proposed work has been carried out.

When the student has presented a dissertation prospectus, whether or not he asks for formal acceptance, his dissertation committee will be responsible for evaluating his competence in the field of psychology within which the dissertation falls. This field will ordinarily include more than one of the areas defined above and may include such related areas as sociology, linguistics, one or more physical sciences, etc. It is assumed that the student will already have demonstrated competence by his performance in Psychology 240. However, if the dissertation prospectus is in a different field of psychology from that evaluated in Psychology 240 or if more than two years have intervened between completing Psychology 240 and submitting the dissertation prospectus in question, then, at its discretion, the committee may require written examination in the thesis field as a whole or in any part of it.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Courses of Instruction

PSYCHOLOGY 115a. Experiential Approaches to Personal Growth

A research-oriented examination of transformations of consciousness such as occur in "peak" or "psychedelic" experiences. Techniques for evoking these transformations of consciousness, for example, the "solo" experience and personal growth communities. Assessment of these transformations. The relationship between these transformations and society. Cross-cultural emphasis.

Enrollment limited to fifteen students.

Mr. Katz

PSYCHOLOGY 118a. Physiological Psychology

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

Mr. Stecher

PSYCHOLOGY 119b. Comparative Psychology

Comparison of the behavior of various species, including man, in an evolutionary perspective.

Miss Samuels

PSYCHOLOGY 120a. Experimental Psychology

Individual or group research carried out under supervision. Techniques of experimentation, experimental design. 6 credits.

Section I: Research in Cognitive Processes

Mr. Wingfield

Section II: Research in Perceptual Processes

Mr. Morant

PSYCHOLOGY 120aR. Experimental Psychology

Section I Only.

*Mr. Wingfield***PSYCHOLOGY 121a. Computers in the Behavioral Sciences**

The role of computers in the behavioral sciences has increased rapidly in recent years. The course will cover application of computers in data analysis, simulation, control of experiments, and computer aided instruction.

Lecture and laboratory.

*Mr. Senders***PSYCHOLOGY 122b. Advanced Experimental Psychology**

Information processing approach to perception, attention, and memory. Perceptual development.

*Mr. Hershenson****PSYCHOLOGY 123b. Non-Verbal Experience and Communication**

An attempt to understand non-verbal experience and communication by examining specific non-verbal media such as body language and selected art forms. These media as expressive modes, stimulus material and assessment techniques. Cross-cultural emphasis.

Prerequisite: Permission of the instructor.

Enrollment limited to fifteen students.

***PSYCHOLOGY 124b. Human Memory**

A detailed examination of traditional and contemporary views on the nature and processes involved in short- and long-term memory.

PSYCHOLOGY 125a. Developmental Psycholinguistics

The study of recent advances in psycholinguistics and their relation to modern structural linguistics. Emphasis will be placed on problems in language acquisition and early cognitive development.

*Mr. Lackner***PSYCHOLOGY 126a. Methods in Personality and Social Psychology**

A study of the design and execution of personality and social psychology research. Practical experience carrying out an independent research project either individually or in small groups.

Prerequisites: Psychology 1a or permission of the instructor.

Enrollment limited to fifteen students.

*Mrs. McArthur***PSYCHOLOGY 127b. Temporal Patterning of Behavior**

Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.

Enrollment limited to fifteen students.

*Mr. Lackner***PSYCHOLOGY 130b. Psychology of Problem Solving and Learning**

A study of the creative process, its background and consequences and its relation to perception and learning theory.

Enrollment limited to juniors, seniors and graduate students.

Mr. Klee

***PSYCHOLOGY 131b. Psychology of Symbolic Processes**

Culture as studied primarily from the frame of reference of psychology. Dreams, myths, and art as created, expressed, and as used in language, the humanities and sciences will be studied as psychological data. The place of psychology in relation to the humanities and the other sciences will be evaluated.

Enrollment limited to juniors, seniors and graduate students.

PSYCHOLOGY 132b. Psychology of Emotions

A consideration of the value dimension of the individual's dynamic relation to the world about him in both its positive and disruptive aspects.

Enrollment limited to juniors, seniors and graduate students.

Mr. Klee

***PSYCHOLOGY 133a. Choice, Will and the Ego**

A revaluation of the "active person." Choice, freedom, and responsibility will be considered as psychological problems. A study will be made of the relevance to choice and action of hedonics, knowledge, reason, and religion, and of man's relation to the perception of good and evil, sickness and health. An assessment of the individual's role in disease and conflict.

Enrollment limited to juniors, seniors and graduate students.

PSYCHOLOGY 134a. Abnormal Psychology

A socio-psychological and dynamic approach to behavior pathology with emphasis on current theories of pathogenic family structure.

Mr. Litven

PSYCHOLOGY 134aR. Abnormal Psychology

Mr. Maher

PSYCHOLOGY 135b. Psychology of Social Change

An investigation into the dynamics of social conflict and social change. Of particular focus will be the effects of social change on human development.

Enrollment limited to fifteen students.

Mr. Litven

PSYCHOLOGY 137a. Personality

Selected personality variables and how they have been investigated. Topics will be studied so as to show their relationship to influential psychological theories.

Not open to students who have taken 138b.

Mr. London

PSYCHOLOGY 137aR. Personality*PSYCHOLOGY 140b. Learning and Behavior**

The concept of learning will be examined critically, on the basis of infra-human and human studies. Techniques for generating and maintaining learned behavior will receive detailed attention, with emphasis on their relevance to mental retardation, mental illness, delinquency, and education.

Enrollment limited to fifteen students.

Mr. Sidman

PSYCHOLOGY 141a. Biological Bases of Motivation

Topics to be treated include hunger, thirst, migration, sexual behavior and parental behavior. Evidence from biology, neurophysiology and endocrinology will be evaluated.

Enrollment limited to fifteen students.

Miss Samuels

PSYCHOLOGY 142a. Psychosomatics

The interrelationships of psychological, social and cultural factors in physical disease. Topics include psychophysiological mechanisms in disease, physiological correlates of mental disease and "somato-psychic problems." *Mr. Giddon*

PSYCHOLOGY 143b. Cognitive Processes

Experiments in language, thinking and attention, with special reference to psychopathology.

Prerequisite: Psychology 50b or permission of the instructor.

Enrollment limited to fifteen students.

Mr. Frederiksen

PSYCHOLOGY 144b. The Psychology of Language

Language development; names, concepts and symbols; expressive language; metaphor; problems of translation; pathology of language.

Enrollment limited to fifteen students.

Miss Simmel

***PSYCHOLOGY 145a. Psychopathology of Childhood**

Theoretical and therapeutic implications of disorders in childhood, focusing on mental retardation and childhood psychosis.

Enrollment limited to fifteen students.

PSYCHOLOGY 146a. Psychopathology and Cognition

Alterations of perceptual and conceptual processes in brain-injured and schizophrenic patients.

Enrollment limited to fifteen students.

Miss Simmel

***PSYCHOLOGY 151b. Utopian Social Psychology**

How good a society does human nature permit? Readings in Utopian literature and in normative social psychology.

Enrollment limited to seniors and graduate students in psychology and contiguous fields.

PSYCHOLOGY 152b. Group Dynamics

A consideration of classical and current experimental approaches to the study of human interaction. Topics will include: history of group dynamics; conformity; obedience; group cohesiveness; social communication; social deviance; group affiliation; social determinants of emotion, etc.

Enrollment limited to fifteen students.

Mr. London

***PSYCHOLOGY 153a. Developmental Approaches to Cognition**

The study of the development of language and thought in the child. Emphasis on problems of concept attainment and perception. Discussion of the developmental theories of Vygotsky, Werner and Bruner. Critique of association theories of cognitive development.

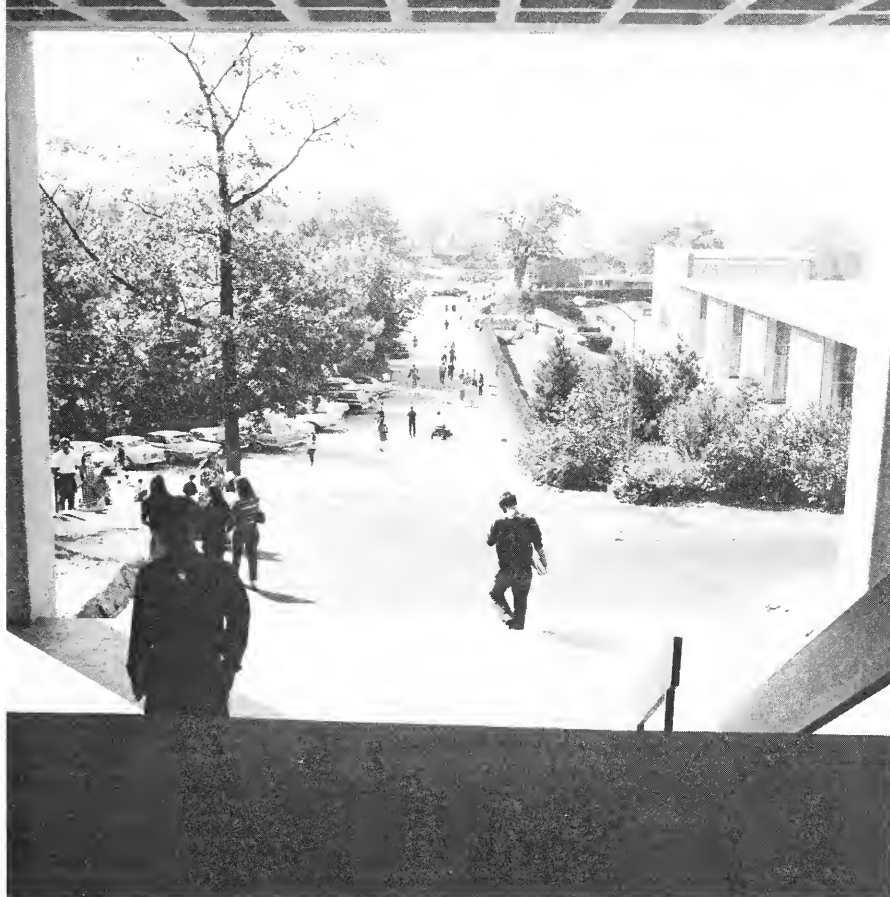
PSYCHOLOGY 155b. Advanced Educational Psychology

This seminar will intend to apply the emerging principles of humanistic and transhumanistic psychology to the problems of learning, teaching and education.

Enrollment limited to senior majors in Psychology with permission of the instructor; all graduate students.

Mr. Katz

* Not to be given in 1970-71.



PSYCHOLOGY 159a. Perception

A survey of the field of perception with emphasis on theory and mechanisms. The interrelationship of perception and personality, phenomenology, social factors and sensory processes will be discussed.

Mr. Hershenson

PSYCHOLOGY 160a. Color Vision and Visual Processes

Basic parameters and experiments governing visual processes and visual perception will be examined. Particular emphasis will be paid to color vision, theories and data from the points of view of physics, biology, psychology, art and aesthetics.

Mr. Stecher

*PSYCHOLOGY 161. Field Work in Clinical Psychology

PSYCHOLOGY 200a and b. Observation and Research Strategies in Psychology

Mr. Morant and Staff

PSYCHOLOGY 201a. Seminar in Abnormal Psychology

Mr. Maher

*PSYCHOLOGY 202b. Seminar in Mathematical Psychology

An examination of current mathematical applications in the behavioral sciences.

* Not to be given in 1970-71.

PSYCHOLOGY 203b. Seminar in Sensation and Perception

The course will cover a graduate level treatment of advanced topics of current theoretical interest in various sensory systems and the implications of this for explaining perceptual phenomena.

Mr. Stecher

*PSYCHOLOGY 204a. Contemporary Issues in Psychology

*PSYCHOLOGY 204b. Contemporary Issues in Psychology

PSYCHOLOGY 205b. Seminar in Memory, Attention and Language

Recent research and theoretical developments in the study of memory as they relate to traditional and contemporary views of selective attention and language in man.

Mr. Wingfield

*PSYCHOLOGY 206a. Seminar in Learning

PSYCHOLOGY 207b. Seminar in Perception

A survey of information processing, approaches to perception, perceptual memory and recognition.

Mr. Morant

*PSYCHOLOGY 207aR. Seminar in Perception

PSYCHOLOGY 208a. Seminar in Cognition

A critical examination of selected topics and issues, with major emphasis on the study of thinking and problem solving.

Miss Simmel

*PSYCHOLOGY 209a. Seminar in Physiological Psychology

Discussion of recent research in the area of neurophysiological mechanisms underlying sensory behavior. Empirical data and theories will be discussed and evaluated.

PSYCHOLOGY 210a. Advanced Psychological Statistics

Descriptive and inferential statistics: t-test, simple analysis of variance, correlating non-parametric tests.

Mr. Hershenson

PSYCHOLOGY 210b. Advanced Psychological Statistics

Topics to be covered will include: correlation and regression, introduction to matrix algebra, multiple regression, partial and multiple correlation, principles of experimental design, and analysis of variance.

Prerequisite: Psychology 210a or permission of the instructor.

Mr. Frederiksen

*PSYCHOLOGY 211b. Seminar in Developmental Psychology

Selected topics in cognitive development research and general developmental theory. Emphasis on Piaget's work and current empirical literature pertaining to behavior organization in infancy, language development and development of conception and logic.

*PSYCHOLOGY 212a. Methodology for Research in Personality

Modes of observation, simple experimental intervention, the basic methods of experimental control, the interview, the formulation and testing of hypotheses, use of personal experience, the function of prediction and the implications of confirmation and disconfirmation.

* Not to be given in 1970-71.

PSYCHOLOGY 213a. Quantitative Methods for Personality Research

A survey of statistical methods used in the measurement of individual differences and in the analysis of multivariate experimental data. Topics to be covered will include: theory of psychological measurement, elementary matrix algebra, multiple and canonical correlation, multivariate analysis of variance, and factor analysis.

Prerequisite: Psychology 210b or equivalent.

Mr. Frederiksen

PSYCHOLOGY 214a. History of Psychological Thought**PSYCHOLOGY 215a. Psychological Scaling Methods and Theory**

This course will consider methods for obtaining metric information from comparative or categorical judgment data. Topics to be covered will include: basic measurement theory, psychophysical scaling, Thurstonian scaling methods, signal detection theory, multidimensional scaling, and techniques for hierarchical cluster analysis.

Prerequisite: Psychology 210a or the equivalent.

PSYCHOLOGY 216a. Selected Clinical Topics**PSYCHOLOGY 217b. Research Seminar in Clinical Psychology**

The components of psychological interviewing, especially of "listening," inquiry, commentary, and interpretation to the client, as well as eventual conceptualization for purposes of record and/or research will be demonstrated, practiced and studied.

Prerequisites: Psychology 200a and b, 212a, or permission of the instructor.

PSYCHOLOGY 218a. Seminar in Social Psychology

This course will provide a general framework for understanding contemporary social psychological theory and research and a feel for the process of research by examining in critical detail one or two key lines of investigation.

Mr. London

PSYCHOLOGY 219a. Physiological Psychology

Study of the neural foundations of behavior. The following will be discussed: electrophysiological analyses of the major sensory pathways; ablation studies; brain stimulation experiments; and the effects of brain surgery and disease in man.

Mr. Lackner

PSYCHOLOGY 219b. Temporal Patterning of Behavior

Seminar on problems of serial patterning in the perception and production of speech. Discussion of problems in the integration and execution of complex motor patterns.

Mr. Lackner

PSYCHOLOGY 220a. Seminar in History and Systems

Mr. Pershonok

PSYCHOLOGY 221. Clinical Psychopathology

Mr. Rand

PSYCHOLOGY 230b. Master's Level Readings for Propositional Review

In consultation with the appropriate area examination committee, each student chooses two propositions at the beginning of the semester. An extensive written, documented defense of the propositions is submitted to the examination committee

by May 1. For certain areas, a literature review may be accepted in lieu of a propositional defense. If the adequacy of the propositional defense or literature review is questioned, then, at the option of either the committee or student, the student will be examined orally on the written material he has submitted.

Mr. Morant and Staff

PSYCHOLOGY 240. Advanced Level Readings for Propositional Review

This course differs from Psychology 230b in that it is a full year course. The written defense of the propositions is submitted by April 1 and defended orally before the area examination committee. The committee will go beyond the specific propositions to examine the student in depth so as to evaluate his knowledge of the broad area from which the propositions were chosen and in which the student intends to do his doctoral dissertation. By petition to the committee the examination may be written. If the propositions chosen or the area of doctoral research cuts across the special areas designated in the catalog, a special area committee will be appointed by the chairman in consultation with the student and his faculty adviser.

Mr. Morant and Staff

PSYCHOLOGY 250-264. Master's Research

Research for the M.A. degree under the supervision of:

- | | |
|----------------------------|-----------------------------|
| 250. <i>Mr. London</i> | 257. <i>Mr. Senders</i> |
| 251. <i>Mr. Hershenson</i> | 259. <i>Mr. Stecher</i> |
| 252. <i>Mr. Katz</i> | 260. <i>Mr. Wingfield</i> |
| 254. <i>Mr. Maher</i> | 262. <i>Mr. Frederiksen</i> |
| 255. <i>Mr. Morant</i> | 263. <i>Mr. Litven</i> |
| 256. <i>Mr. Lackner</i> | 264. <i>Mrs. McArthur</i> |

PSYCHOLOGY 290-299. Readings in Psychological Literature

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|---|--------------------------------------|
| 290. History and Systems | |
| 291. Statistical Methods | <i>Mr. Stecher</i> |
| 292. Sensation and Perception | <i>Messrs. Wingfield and Lackner</i> |
| 293. Learning and Thinking | <i>Mr. Wingfield</i> |
| 294. Physiological and Comparative Psychology | <i>Mr. Stecher</i> |
| 295. Personality and Motivation | <i>Mr. Maher</i> |
| 296. Psychopathology and Clinical Psychology | <i>Mr. Katz</i> |
| 297. Child and Social Psychology | <i>Mrs. McArthur and Mr. Litven</i> |
| 298. Advanced Readings in Experimental Psychology | <i>Staff</i> |
| 299. Advanced Readings in Dynamic Psychology | |

PSYCHOLOGY 300. Department Colloquium and Research Seminar

Mr. Morant and Staff

*PSYCHOLOGY 301. Seminar in Advanced Psychological Topics I

PSYCHOLOGY 400-408. Dissertation Research

Independent research for the Ph.D. degree.

- | | |
|-------------------------|----------------------------|
| 400. <i>Mr. Klee</i> | 405. <i>Miss Simmel</i> |
| 401. <i>Mr. Maher</i> | 407. <i>Mr. Hershenson</i> |
| 402. <i>Mr. Morant</i> | 408. <i>Miss Hanfmann</i> |
| 404. <i>Mr. Senders</i> | |

* Not to be given in 1970-71.

Sociology

Objectives

The graduate program in sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree during his course of study. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

Faculty

Professor PHILIP E. SLATER, Chairman: Family. Small groups.

Professor EGON BITTNER: Sociology of law. Social controls.

Professor Emeritus EVERETT C. HUGHES: Social organization. Race and ethnic relations. Occupations and work systems.

Visiting Professor PAUL KECSKEMETI: Social theory. Political sociology.

**Professor MORRIS S. SCHWARTZ: Social psychology. Social psychiatry.

*Professor MAURICE R. STEIN: Communities. Sociology of literature.

Visiting Professor EUGENE V. WALTER: Comparative institutions. Field methodology. Social theory.

***Professor KURT H. WOLFF: Sociological theory. Sociology of knowledge.

*Adjunct Associate Professor B. SVI SOBEL: Sociology of religion. Sociology of the Jews.

Associate Professor IRVING K. ZOLA: Deviance. Sociology of health and illness.

*Assistant Professor JEROME BOIME: Social and political theory; the relation of violence to social structure.

Assistant Professor CHARLES DERBER: Social psychology. Stratification.

Assistant Professor GORDON FELLMAN: Social psychology. Stratification.

Assistant Professor CHARLES FISHER: Sociology of science. Collective behavior.

° On Leave, 1970-71.

°° On Leave, Fall Term, 1970-71.

°°° On Leave, Spring Term, 1970-71.

Assistant Professor NEIL FRIEDMAN: Race relations. Urban sociology.

Assistant Professor CALVIN HICKS: Race and class. Contemporary social change.

Assistant Professor ROSABETH MOSS KANTER: Social organization. Social psychology. Utopian communities.

Assistant Professor LARRY ROSENBERG: Field methods. Social psychology of consciousness.

Assistant Professor GEORGE ROSS: Political sociology. Social theory.

Assistant Professor RICHARD SENNETT: Urban sociology.

*Assistant Professor SAMUEL E. WALLACE: Field methods. Violence.

In addition to the general fields represented by the above instructors, there are two special training programs: Field Methods Training Program and the Social Organization of Medical Care. For further information, please write to the Sociology Department.

Degree Requirements

Doctor of Philosophy

Program of Study. Students entering the Ph.D. program in Sociology are normally expected to take two years of course work. Of this only one course is required. All incoming students are required to take the introductory departmental Proseminar, Sociology 290a. Among the other courses students are encouraged to take are those on social theory and at least one from among the various methodologies offered. Students will make up an individual program of study in consultation with their advisers.

Credit granted for graduate work done elsewhere will not be considered until the student has successfully completed one year of residence.

After completing three semesters of residence, passing one language examination, and having two Master's papers approved by the Department, the student may be granted an M.A. degree.

Residence Requirement. The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

Language Requirements. Candidates for the Doctor's degree must demonstrate either proficiency in two foreign languages or knowledge of one language in depth. At least one of the languages must be French or German. A second language may, upon petition to the department, be substituted.

Qualifying Examinations. During a student's residency at Brandeis until the time of his formal admission to candidacy, the specific planning, evaluations and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee which will be composed

* On Leave, 1970-71.

of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study and research, the student will take an oral qualifying examination covering both general sociology and the areas of his special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.

Admission to Candidacy. A student shall be eligible for admission to candidacy when he has fulfilled his residence requirements, foreign language requirements, passed the departmental qualifying examination, and had his dissertation proposal approved.

Dissertation and Final Oral Examination. The candidate will be required to prepare a prospectus for his dissertation before he begins concentrated work. This prospectus must be prepared within six months after he has passed the qualifying examinations and must be approved by the student's advisory committee and by the department.

When the dissertation is accepted by the department, a final oral examination will be scheduled, wherein the candidate must successfully defend his dissertation before the department members and at least one member of the faculty engaged in graduate instruction outside the department.

Courses of Instruction

*SOCIOLOGY 100a. Development of Modern Sociology

A review of the major achievements of empirical inquiry in European and American sociology from the middle of the nineteenth century to the middle of the twentieth century.

SOCIOLOGY 101a. Sociology of Conflict and War

Antagonistic processes in various social settings. Antagonism and the social structure. Crisis situations. Origin and resolution of crises. Effects of crises. Evolution and revolution.

Mr. Kecskemeti

*SOCIOLOGY 102a. Social Psychiatry

SOCIOLOGY 102aR. Social Psychiatry

Topics such as the following will be explored: psychological and sociological definitions of mental illness and health; the pathological, the disturbed and the disturbing in our personal lives, specialized roles, institutional structures and societal forms. Small group discussions will be oriented toward understanding the manifestation of pathology and interpersonal difficulty.

Mr. Schwartz

*SOCIOLOGY 104b. Sociology of Education

What is relevant education at the elementary, secondary, and college levels; what are the political, economic, social, and psychological constraints on education which often keep it irrelevant.

* Not to be given in 1970-71.

*SOCIOLOGY 106a and b. Sociology of Literature

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man.

Prerequisite: Permission of the instructor.

SOCIOLOGY 107a and b. Issues in Social Psychology

A survey and critical evaluation of selected theories of the self which stress social communication (e.g., James, Mead, Goffman, Sullivan, Laing, and Gurdjieff).

Mr. Rosenberg

SOCIOLOGY 108b. Critiques of Contemporary Society

The focus of this course is critical social analysis of modern society, to be considered especially in terms of implications for strategies of political action. Readings include the social analyses of Marcuse, Mills, Galbraith, Ellul, McLuhan, Barrington Moore, and others and programmatic strategies ranging from the perspectives of Abby Hoffman to those of Andre Gorz, the New Left and others. Students will be encouraged to develop their own critical perspectives. This course should be viewed as an introduction to a very large set of political, social, and personal issues.

Messrs. Derber and Friedman

SOCIOLOGY 110a. Sociology of Knowledge

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature.

Mr. Wolff

*SOCIOLOGY 111b. Political Sociology

SOCIOLOGY 112b. Social Stratification

A study of life styles and relationships among different "classes" in American society, theories of social class and political order, and studies of class and social change in revolutionary and other societies.

Mr. Fellman

*SOCIOLOGY 116a. Topics in Social History of Black People in America

This course will cover one or more aspects of the black experience. Exact topic or topics will depend upon the development of the African-Afro-American Studies Department.

SOCIOLOGY 117a. Sociology of Occupations

A comparison of work and occupational systems in various cultures. Social organization of occupations and the place of work in the life of the individual.

Mr. Bittner

SOCIOLOGY 122b. Sociology of Power

An analysis of the consolidation and disaffection of political interaction, obedience and ideology, proceeding on the assumption that the political problem designates a tension between the inhibition and release of alternative forms of community.

Mr. Phelan

SOCIOLOGY 125a. Quantitative Methods in Research

A workshop on social science methods for studying power structures, imperialism, racism, etc. Discussion of the ideological nature of social science research. Enrollment limited by permission of the instructor.

Mr. Friedman

* Not to be given in 1970-71.



SOCIOLOGY 126a. Sociology of Deviance

Deviance as a social process, its nature and conception, its functional as well as dysfunctional aspects. Survey of theory and research. Concentration on selected instances of individual and social pathology. *Mr. Zola*

SOCIOLOGY 126b. The Institutions of Social Control

Focus is primarily on the social and institutional response to deviance, however defined, once it occurs. The formal and informal sanctions, the range of punishments from norms to laws, from hospitals to prisons. The agents of social control—the police, the F.B.I. and the other “helping” professions. *Mr. Zola*

SOCIOLOGY 127b. Deviant Communities

The origins, recruitment, and socialization practices, life styles, social control processes, and societal relations of unconventional and deviant communities, including religious, political, and criminal groups. The nature of conventional communities will be understood in comparison. Readings will encompass material from the areas of deviance, collective behavior, social movements. Field work will be required. *Mrs. Kanter*

*SOCIOLOGY 129a. The Urban Family

An exploration of what role the city now plays in shaping the patterns of people's lives in families. The course explores such questions as what kinds of city conditions affect the quality of nurturance in families, how the structure of the city can be related to the freedom family members have in their dealings with each other or to the freedom family members have for complex associations outside the family group.

*SOCIOLOGY 132b. Urban Sociology

A consideration of major problems of American cities: transportation, poverty, education, housing, ethnic relations, riots and rebellions. Relations between these problems, sociological theories of the city, and attempts to solve the problems.

* Not to be given in 1970–71.

***SOCIOLOGY 133b. Comparative Urban Cultures**

This course will attempt to define the range of complexity in city life by making a series of cultural comparisons between cities; the course will focus on working-class people, and attempt to judge whether and in what ways different kinds of city structures affect the quality of their lives.

SOCIOLOGY 135a. Group Process

Interpretation of interpersonal behavior and group development, based in part on observation of the discussion group itself. Readings will include material from psychology and social anthropology as well as sociology. *Mr. Slater*

***SOCIOLOGY 135aR. Group Process**

***SOCIOLOGY 135b. Advanced Group Process**

A continuation of Sociology 135a.

Open to students who have taken Sociology 135a.

SOCIOLOGY 142a. Social Psychology: Psychoanalytic Theory and Society

Implications of the psychoanalytic view of personality for the nature and functioning of social institutions, social change, and the possibilities of Utopia.

Mr. Fellman

SOCIOLOGY 143b. Ethnographic Studies in Social Interaction

In this course students will carry out field work studies of social interactions. There will be field exercises, theoretical readings, class discussions, and lectures. A major paper will be required.

Enrollment limited to twenty-five students.

Mr. Friedman

SOCIOLOGY 145a. Sociology of Life Styles

An investigation of the "counter-culture" developing among contemporary youth, with particular concern for the political implications of the Cultural Revolution. Special attention will be given to new communal styles of life involving the reconstitution of personal relationships and family life, new conceptions of work and play, and a reintegration of political and personal life.

Mr. Derber

SOCIOLOGY 147a and b. Social Psychology of Organizations and Groups

The impact of social structure and social arrangements on individuals and groups. Issues such as communication and trust, authority and influence, self-identity-formation and personal change, and teaching and learning will be examined in a large number of organizations and groups, including the class group itself, school (from ghetto to progressive schools to universities), mental hospitals, Synanon, and other peer-self-help groups, "brainwashing" organizations, bureaucracies and work organizations, utopian communities, religious orders, and encounter groups. Field work and extensive participation in class discussions and group exercises will be required.

Mrs. Kanter

SOCIOLOGY 148a. Social Psychology of Consciousness

The course will be organized around the concept of "conscious energy" as revealed in some of the many programs designed to awaken higher levels of consciousness (e.g., Zen, Yoga, Sufism, psychedelic drugs, and the teachings of G. I. Gurdjieff). The course will include a workshop in Hatha Yoga. *Mr. Rosenberg*

SOCIOLOGY 148b. Social Psychology of Consciousness

A continuation of Sociology 148a.

Open to students who have taken Sociology 148a or with permission of the instructor. *Mr. Rosenberg*

SOCIOLOGY 150a. Sociology of Revolutionary Change

Comparative study of revolutionary change, using historical evidence and material, with special emphasis on the bourgeois revolution, the marxist-leninist revolution, and the third world revolution. *Mr. Ross*

SOCIOLOGY 152b. Sociology of Repression

This course is an inquiry into the origins and forms of repression in modern life. It examines not only overt repression of social groups through violent means but the structures of a technological society that encourage non-violent self-repression. *Mr. Sennett*

SOCIOLOGY 154b. Sociology of Science

Science is studied as it is done by men who live in political, social, intellectual, professional, and moral worlds. *Mr. Fisher*

SOCIOLOGY 155b. Social Movements

The politics of the impatient scrutinized from the perspectives of social psychology. Attempts will be made to understand the structure and strategies of cadres. Examples are drawn from contemporary America. *Mr. Fisher*

SOCIOLOGY 160a and b. Sociology of Art: Afro-American Art, Literature, Music, and Theater. World as View and World as Event.

This course will trace the ways in which the emergence of a self-conscious black ethnocentric culture becomes a prism through which the Puritan ethos is criticized and an alternative culture is created. Authors covered will include Dunbar, Walker, Langston Hughes, Locke, Toomer, with Richard Wright as a transitional figure, leading to Killens, Ellison, Saunders, Cleaver, Hernton, among others. *Mr. Hicks*

SOCIOLOGY 161a. Historical Sociology: An Exploration of the Black Presence in American History

Starting with the Revolution and proceeding through the Civil War, Reconstruction, World War I, World War II, and the recent period. Topics included will be class and caste, black protest, black churches, and others to be selected partly depending upon the interest of the group. *Mr. Hicks*

SOCIOLOGY 162b. Sociology of Language and Communication

This course presents a social and political conception of language as one among other forms of communication. It focuses on the oral "folklorish" quality of black society, in an effort to contrast the stress on communication through taste, touch, and smell in this group, with the emphasis on sight and hearing in the general culture. *Mr. Hicks*

SOCIOLOGY 188b. Sociology of Law

The legal order considered in a framework of cross-cultural and historical comparison. The role of the instruments of the law and of the administration of justice in contemporary society. *Mr. Bittner*

***SOCIOLOGY 190b. Social Organization of Medical Settings**

An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professionals and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed.

***SOCIOLOGY 191a. Health, Community, and Society**

An exploration into the interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, and the place of social science in medicine.

***SOCIOLOGY 192. Sociology of the Medical Professions**

This course will provide an analysis of the key occupational groups in medicine, as well as of quasi and marginal practitioners. The selection, recruitment and training of those groups will be examined and the strategic points in their careers will be considered.

SOCIOLOGY 200a and b. Classical Sociological Theory

Study of major sociologists, such as Comte, Spencer, Marx, Durkheim, Pareto, Weber, Simmel, Ward, Ross, Sumner, Park, Mannheim, in their historical setting, with special attention to their substantive concerns and methodologies.

1st sem., Mr. Bittner

2nd sem., Mr. Kecskemeti

SOCIOLOGY 203. Field Methods in Sociological Research

Intensive practice in sociological observation and concentrated field work along with readings and discussion of the theoretical issues involved. *Mr. Fisher*

***SOCIOLOGY 204a and b. Sociology and History**

SOCIOLOGY 212a and b. The Social Organization of Misery

Perception and uses of distress in urban environments; the evolution of poverty as a deviant vocation; the moral structure of pauperism; distribution of illth; the moral topography of housing; stratification of the lowly; cultural dynamics associated with privation; methodological issues in the study of poverty. For individual projects, students may choose one or both kinds of research methods explored in the course: (1) ethnography and field work, (2) historical inquiry. *Mr. Walter*

***SOCIOLOGY 213a. Sociology of Fads and Foibles**

A seminar devoted to research and conceptualization in the whys and wherefores, the "natural history" of acts labelled "out" as well as "in." Individual and joint projects. Limited enrollment. Admission by consent of instructor.

SOCIOLOGY 214a. Cultures of Taste

A seminar exploring how "high cultures" of taste arise in different societies. The aim of the course is to try to learn about the values of a particular culture by understanding its standards of pleasure; the course will open with an exploration of how and why French cuisine developed standards more elaborate than those of other Latin countries. *Mr. Sennett*

SOCIOLOGY 215b. Ethnomethodology

The study of mundane behavior undertaken under the aegis of the actor's conceptions of reasonableness and practicality, with special emphasis on the function of tacit background presuppositions and the procedures of making common sense.

Mr. Bittner

SOCIOLOGY 216b. Seminar in Social Theory

A review of the literature in contemporary political sociology. *Mr. Ross*

SOCIOLOGY 217a and b. Problems and Concepts in Medical Sociology and Deviance

A general seminar on current research and theoretical issues. Individual and group projects will be emphasized. *Mr. Zola*

SOCIOLOGY 218b. Seminar in Race and Ethnic Relations

The nature and role of ethnic and racial groupings in various social contexts. Given at Boston College. *Mr. Hughes*

SOCIOLOGY 222a. Utopia and Utopian Communities

Mrs. Kanter

SOCIOLOGY 223a. Seminar in Careers

Given at Boston College. *Mr. Hughes*

***SOCIOLOGY 224a. Law Enforcement and the Administration of Justice**

The study of activities of legal officials and professionals, considered as mechanisms determining the nature and availability of legal remedies for public and private purposes.

SOCIOLOGY 225a and b. Community Sociology

Study of and in a nearby community. Although the course will be largely in the field, it will include a critical appraisal of classic community studies.

Mr. Fellman

SOCIOLOGY 226b. Seminar in Social Psychology

A social and psychological analysis of oppositional forces in modern society with primary attention focused on student movements. The conception of students as a revolutionary class will be critically examined from historical, sociological, and psychological perspectives. Related topics include the role of the university in the political process, the meaning of generational conflict and the youth culture, and the revolutionary potential of the intellectual.

Mr. Derber

SOCIOLOGY 227a. Group Process Seminar

Mr. Slater

SOCIOLOGY 228a. Some Pre-Theoretical Problems of Sociology

Sociological aspects of sociology. Relations between philosophical and methodological problems of sociology. Conditions of constructing sociological theory.

Major background readings for student papers: Maurice Natanson, ed., *Philosophy of the Social Sciences*; Alfred Schutz, *Collected Papers*, Vos. I and II.

Mr. Wolff

* Not to be given in 1970-71.

***SOCIOLOGY 229a. Seminar in Social Psychology of Organizations and Groups**

Advanced study of social structure, communication, authority relations, and personal change in organizations, as well as deeper examination of the nature of teaching and learning. The course will stress independent or class research projects and teaching practice, as well as experimentation with new group methods.

Mrs. Kanter

SOCIOLOGY 230-249a and b. Readings in Sociological Literature

- | | |
|---------------------------|----------------------------|
| 230. <i>Mr. Bittner</i> | 240. <i>Mr. Friedman</i> |
| 231. <i>Mr. Fellman</i> | 241. <i>Mr. Wolff</i> |
| 232. <i>Mr. Hughes</i> | 242. <i>Mr. Fisher</i> |
| 233. <i>Mr. Boime</i> | 243. <i>Mr. Zola</i> |
| 234. <i>Mr. Schwartz</i> | 244. <i>Mr. Kecskemeti</i> |
| 235. <i>Mr. Rosenberg</i> | 245. <i>Mrs. Kanter</i> |
| 236. <i>Mr. Slater</i> | 246. <i>Mr. Hicks</i> |
| 237. <i>Mr. Sobel</i> | 247. <i>Mr. Sennett</i> |
| 238. <i>Mr. Walter</i> | 248. <i>Mr. Derber</i> |
| 239. <i>Mr. Wallace</i> | 249. <i>Mr. Ross</i> |

SOCIOLOGY 255a and b. Seminar in Urban Studies

Research on problems of urban change and future social policy for cities. The research may involve participation in programs of social action, using the resources of the Cambridge Institute for Policy Study.

Mr. Sennett

***SOCIOLOGY 256b. Seminar on Research on Urban History and Development**

Projects in this seminar will be oriented around the history of a city or of a group of cities, but speak to the issues of social theory and social structure.

***SOCIOLOGY 258b. Seminar in Applied Sociology**

SOCIOLOGY 290a. Pro-Seminar

A seminar meeting once a week in which the faculty introduces themselves, their interests and research.

Required of all first year graduate students.

Mr. Schwartz

SOCIOLOGY 300c. Colloquium

The purpose of the colloquium is to give staff members, sociologists from other institutions, and post-M.A. students the opportunity to present current research, tentative hypotheses, and more general ideas and positions concerning the study of society.

Staff

SOCIOLOGY 301. Advanced Field Research

A second year course in methods of field research. Students will be placed as participant observers in a number of different institutions and will be individually supervised in their field work.

Mr. Schwartz

SOCIOLOGY 305a and b. Joint Seminars in Social Theory and Social Issues

Staff

SOCIOLOGY 400. Dissertation Research Seminar

Open to all advanced students.

Staff

SOCIOLOGY 401–420. Dissertation Research

Independent research for the Ph.D. degree.

- | | |
|---------------------------|-------------------------|
| 401. <i>Mr. Bittner</i> | 411. <i>Mr. Wolff</i> |
| 402. <i>Mr. Fellman</i> | 412. <i>Mr. Zola</i> |
| 403. <i>Mr. Hughes</i> | 413. <i>Mrs. Kanter</i> |
| 404. <i>Mr. Schwartz</i> | 414. <i>Mr. Boime</i> |
| 405. <i>Mr. Rosenberg</i> | 415. <i>Mr. Fisher</i> |
| 406. <i>Mr. Slater</i> | 416. <i>Mr. Hicks</i> |
| 407. <i>Mr. Sobel</i> | 417. <i>Mr. Sennett</i> |
| 408. <i>Mr. Stein</i> | 418. <i>Mr. Derber</i> |
| 409. <i>Mr. Wallace</i> | 419. <i>Mr. Ross</i> |
| 410. <i>Mr. Friedman</i> | 420. <i>Mr. Walter</i> |

Theater Arts

Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate—to develop skilled craftsmen who are also men and women of knowledge and judgment about the art they intend to make their careers. The program combines professionally oriented training in the various theatrical specializations—*Acting*, *Acting-Directing*, *Design-Technical*, *Dramatic Writing* and *Film*—with graduate level study in dramatic literature. It also combines both of these with continual practical experience on and behind the stages of the three Spingold theaters, where the actors act, the directors direct, the designers design and construct, and the playwrights have the opportunity to see their works-in-progress and finished plays performed by casts which include professional actors-in-residence as well as graduate and undergraduate students.

Please note that a degree in the Directing discipline exclusively is not offered by the department.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the department requires an audition for applicants in Acting and Acting-Directing. Audition material may be of the student's choosing, however, the Audition Committee suggests: one serious and one comic selection of not more than five minutes each. (Three regional auditions are held annually as follows: Chicago—early March; San Jose—early April; Brandeis—mid-April.) Submission of a portfolio is required of Design-

Technical applicants, and submission of an original script (or other example of creative writing) is required of Dramatic Writing applicants. When applying, students must define their area of concentration, namely: Acting, Acting-Directing, Design-Technical, Dramatic Writing or Film.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by March 1 of their first year in residence.

Faculty

Associate Professor JAMES H. CLAY, *Chairman*; Professor HOWARD BAY; Visiting Professor WILLIAM GIBSON; Associate Professors MARTIN HALPERN (*Graduate Student Adviser*), JOHN F. MATTHEWS, CHARLES W. MOORE; Assistant Professors MAUREEN HENEGHAN, DOUGLAS R. MADDUX, PETER SANDER; Instructors ANNE TOLBERT, NORMAN RIZZI; Lecturers TIMOTHY ASCH, KENNETH H. GOLDEN, ANDREW J. SILVER, DAVID E. WESTPHAL; Visiting Lecturer MAGDALINE CONOMOS; Staff: WALTER DOLAN, BARRY A. ODOM.

Artists-in-Residence: HOWLAND CHAMBERLAIN, KENYON MARTIN, K. LYPE O'DELL, DAVID PALMER, MERVYN WILLIAMS.

Degree Requirements

Master of Fine Arts

Residence Requirements. A minimum of eight full-courses or the equivalent in half-courses at the graduate level are required of all candidates.

Program of Study. The program of study varies for each specialty as given below. However, candidates in all disciplines must complete two semester electives each year in addition to the normal specialty courses. Theater Arts 202 will fulfill the elective requirements in the second year, if desired.



General Examination. Students will be required to pass a general examination in the basic materials of dramatic literature, dramatic theory and criticism, and theater history. This examination may be taken at any time during the candidate's residence, and in case of failure may be repeated once. However, if a candidate elects Theater Arts 202 in his second year of residence and successfully completes the course, this will be considered fulfillment of the general examination requirement.

ACTING AND ACTING-DIRECTING

Required Courses

First Year:

THEATER ARTS 203. Advanced Acting Studies: I

6 hours a week.

Mr. Sander

THEATER ARTS 207. Body Movement for the Actor: I

5 hours a week.

Miss Tolbert

THEATER ARTS 209. Speech Studies for the Actor: I

3 hours a week.

Miss Conomos

Two elective semester courses.

Second Year:

THEATER ARTS 204. Advanced Acting Studies: II

6 hours a week.

Mr. Moore

THEATER ARTS 208. Body Movement for the Actor: II

5 hours a week.

Miss Tolbert

THEATER ARTS 210. Speech Studies for the Actor: II

3 hours a week.

Two elective semester courses.

Special Option in Acting-Directing. Students admitted to the special option in Acting-Directing will add *Theater Arts 213* described below to their first year program. Students who complete this course with distinction are then eligible to substitute the direction of one department production for one of the second year performance requirements described under *Participation in Productions*.

THEATER ARTS 213. Advanced Directing

3 hours a week.

Mr. Moore

Participation in Productions. Students will normally perform in at least two major productions (Theater I or Theater II) each year, in addition to assignments to the various studio productions in Theater III. Students will also be required to participate on production crews in at least one major departmental production during their first year in residence and at least one during their second year in residence.

DESIGN-TECHNICAL

Program of Study

The program of study will be worked out by the student in consultation with the design faculty with courses selected from the following:

THEATER ARTS 211. Scenic Design: I	<i>Mr. Bay</i>
THEATER ARTS 212. Scenic Design: II	<i>Mr. Bay</i>
THEATER ARTS 217. Advanced Costume Design and Construction: I 3 hours a week.	<i>Miss Heneghan</i>
THEATER ARTS 218. Advanced Costume Design and Construction: II 3 hours a week.	<i>Miss Heneghan</i>
THEATER ARTS 219. Lighting Design: I	<i>Mr. Maddox</i>
THEATER ARTS 220. Lighting Design: II	<i>Messrs. Maddox and Bay</i>
THEATER ARTS 221. Sketching and Rendering: I	<i>Mr. Rizzi</i>
THEATER ARTS 222. Drafting and Stage Techniques	<i>Mr. Dolan</i>
THEATER ARTS 223. Scenic Painting	<i>Mr. Rizzi</i>
THEATER ARTS 224a. Stage Mechanics	<i>Mr. Dolan</i>
*THEATER ARTS 224b. Theater Architecture	
THEATER ARTS 225. Production Laboratory: I	<i>Staff</i>
THEATER ARTS 226. Production Laboratory: II	<i>Staff</i>
THEATER ARTS 227. Sketching and Rendering: II	<i>Mr. Rizzi</i>

Thesis Production. The graduate design thesis is the final problem in either Theater Arts 212 or 218 depending upon the student's major field of interest—set design or costumes. It is the full presentation of projected designs for the scenery, costumes and lighting for a specific play or opera presented in portfolio form. In some cases, a student's main-stage design assignments in his second year of residence may constitute part of the thesis project.

Participation in Productions. All major productions are designed by graduate students. Therefore, a student may expect to be involved in a design capacity on at least three productions during the year. In addition, the student will act as design consultant and technical director of one Theater III studio production each year as well as participating on various production preparatory crews as arranged in conference with the design faculty. Average time expended per week participating in production assignments is fifteen hours.

° Not to be given in 1970-71.

DRAMATIC WRITING

First Year:

THEATER ARTS 215. Seminar in Dramatic Writing: I

3 hours a week plus regularly scheduled individual conferences. *Mr. Gibson*

Two elective half-courses which must be approved in advance.

Second Year:

THEATER ARTS 216. Seminar in Dramatic Writing: II

3 hours a week plus regularly scheduled individual conferences. *Mr. Gibson*

Two elective half-courses which must be approved in advance.

Thesis Play. The fourth semester in residence will normally be reserved for the student to concentrate on the completion of his thesis play. This play, a full length work, may or may not result directly from his three previous semesters of study. A committee composed of the thesis adviser and two other faculty members from the department will certify its acceptability as fulfilling the thesis requirement. Plays of particular merit or promise will be given a fully mounted production in Theater II during the academic year following, but only if the author is able to be present during the rehearsals and production.

Participation in Productions. Students are required to participate in the preparation of all Theater III studio productions of the shorter plays or longer works-in-progress which they write for the Seminar in Dramatic Writing. They will also be required to participate, either onstage or offstage (e.g., production crew) in at least two other department productions during the first year in residence and at least one during the first semester of the second year in residence.

Language Requirement. Students will be required to demonstrate reading proficiency in one of the following languages: Greek, Latin, French, German or Italian. With permission of the department's Graduate Student Adviser, another relevant language may be substituted in which a significant body of dramatic literature exists. The language requirement must be met by the end of the third semester of residence.

FILM

Program of Study. Each student must take one film production course, one film esthetics course and either a directing, acting, design or writing course each year. The fourth course may be an elective in another department, with the approval of the Graduate Student Adviser.

THEATER ARTS 140a. Introduction to Film: The Documentary

A screening and analysis course covering documentary films which reflect changing American life and standards in the 20th century. *Mr. Westphal*

THEATER ARTS 140b. Introduction to Film: History of the Cinema

A survey course with screenings and analysis of the great Film Classics, including Expressionism, Neo-realism and Surrealism. *Mr. Silver*

THEATER ARTS 141. Film in Research*THEATER ARTS 142a. Film Analysis: I**

Viewing and discussion of fifteen films to stimulate understanding and appreciation of essentials of the medium. An attempt to discover the capacities of film and to suggest the properties that must be investigated in preparation for criticism. Class discussion augmented by visiting lecturers whenever possible. Fifteen short papers required.

Enrollment limited to thirty students.

Laboratory Fee: \$7.50

Mr. Silver

THEATER ARTS 142b. Film Analysis: II

Intensive study of three filmmakers (Bergman, Antonioni and Godard) with an eye to developing a concept of cinematic style. An analysis of cinematic technique. An analysis of how the vocabulary of film criticism has developed as the technique has developed.

Prerequisite: Theater Arts 142a and permission of the instructor.

Laboratory Fee: \$7.50

Mr. Silver

THEATER ARTS 143a and b. Seminar in Film Writing

Enrollment limited to twelve students.

Mr. Golden

THEATER ARTS 250. Film Tutorial: I

A workshop for first year graduate students.

To Be Announced

THEATER ARTS 251. Film Tutorial: II

A workshop for second year graduate students.

To Be Announced

THEATER ARTS 252a and b. Method and Theory in Ethnographic Film

A seminar on the analysis of Ethnographic Film in relation to basic anthropological concepts. Students will also be introduced to a wide range of cinema field equipment. It is expected that film majors from the Theater Arts Department will team up with students from the Anthropology Department to undertake field research in the Boston area.

Laboratory Fee: \$15.00

Mr. Asch

Thesis Films. Each student will be responsible for writing, directing, producing, photographing and editing two films. One film will be made in the first year, the other in the second year. As a general rule, one of these films will be made by the student as a work of personal expression. The other will normally be made on contract for an outside non-commercial granting agency, such as educational television, a government agency, or a similar sponsor. The final, completed release print of the films will constitute the student's thesis.



Co-Production. With permission from the faculty, students may work together, in pairs or in groups, to produce their thesis films. Thus, if one student is concentrating in Writing and another in Directing they might be permitted to work as a team to fulfill the requirement.

Participation in Productions. Students are required to assist in the shooting of films by their colleagues. They may also be required to produce, direct or write scripts for such film-making projects as the Dretzin Living Biographies or television shows in production on campus or at local television stations.

Language Requirement. Students will be required to demonstrate reading proficiency in one of the following languages: Greek, Latin, French, German or Italian. With permission from the Graduate Student Adviser, another relevant language may be substituted in which a significant body of dramatic or cinematic literature exists. The language requirement must be met by the end of the third semester in residence.

Elective Courses Available to Graduate Students

***THEATER ARTS 115b. Modern Comedy**

A study of comedy since its rebirth in the late nineteenth century. Particular emphasis on Shaw and Chekhov, and treatment of such playwrights as Wilde, Synge, O'Casey, Pirandello, George Kelly, Giraudoux, Anouilh and T. S. Eliot.

2 classroom hours a week.

THEATER ARTS 122a. Modern Drama

The major European dramatists from the mid-nineteenth century through the 1920's, including Ibsen, Strindberg, Chekhov, Synge, Shaw, and Pirandello.

Mr. Halpern

THEATER ARTS 123b. Contemporary Drama

Continental, British and American dramatists from the 1920's to the present, including Brecht, Lorca, Giraudoux, Sartre, Beckett, Genet, Eliot, Deurrenmatt, O'Neill, Albee, and Weiss.

Mr. Halpern

THEATER ARTS 124a and aR. Shakespeare

Messrs. Cunningham, Huffman and Smith

THEATER ARTS 125a. History of American Drama

See American Civilization 125a for description.

Mr. Matthews

THEATER ARTS 125b. History of American Drama

See American Civilization 125b for description.

Mr. Matthews

THEATER ARTS 135. Popular Arts*THEATER ARTS 151. Tragedy**

Using Greek, Elizabethan and modern plays as data, a critical inquiry into the philosophical problems and paradoxes posed by tragic drama. Among views examined are those of Aristotle, Plato, Tertullian, Racine, Hume, Lessing, Hegel, Schopenhauer, Nietzsche, various Marxists and Freudians, and such contemporary theorists as Cassirer.

Mr. Matthews

THEATER ARTS 170a. Elizabethan and Jacobean Drama

See English 142a for description.

Mr. Smith

***THEATER ARTS 171b. Modern British and American Drama**

See English 185b for description.

THEATER ARTS 202. Seminar

Advanced studies in dramatic theory and literature and theater history. For second year graduate students.

Mr. Halpern

***THEATER ARTS 205. Shakespearean Acting**

3 hours a week.

In addition, the following film courses are considered electives: Theater Arts 140a, 140b, 141, 142a, 142b, 143a and b.

Fellowships

Maxwell and Fannie Abbell Teaching Fellowship in Judaic Studies (1954) Created by the late Maxwell Abbell of Chicago, Illinois, to support a teaching fellowship in the field of Judaic Studies.

Viola G. and Michael Addison Fellowship Endowment (1966) Established in honor of becoming a Fellow of the University by Mrs. Michael Addison of New York. The income will provide fellowships for outstanding and deserving students who are doing their advanced work at the University.

Adlay Jewelry Fellowship (1970) Granted by Mr. Howard Saft of New York City. To provide fellowship stipends to outstanding graduate students.

The Melvin and Marjorie Afremow Fellowship in Microbiology (1969) Established by Mrs. Melvin Afremow of Chicago, Illinois, in memory of her late husband. To be awarded to an outstanding graduate student who is undertaking advanced studies in microbiology.

Allied Chemical Foundation Fellowship (1964) Established by the Allied Chemical Foundation of New York. This Fellowship will be awarded, at the University's discretion, to an outstanding graduate student, a citizen of the United States or Canada, who is concentrating in the field of Chemistry, and who has demonstrated an aptitude for research in science.

Jeannette and Louis Altschul Fellowship Fund (1946) Established by the late Jeannette and Louis Altschul of New York City to help subsidize the education of gifted students to complete their graduate program.

American Friends of Hebrew University Lown Fellowship Program (1967) An exchange fellowship program through Hebrew University supported by Mr. Philip Lown of Boston, Massachusetts.

Bernard Aronson Teaching Fellowship (1964) Established by Mr. Bernard Aronson of New York, New York, to provide teaching fellowships for graduate students who are concentrating in the sciences.

The Artkraft-Strauss Sign Corporation Fellowship (1969) Established by the Artkraft-Strauss Sign Corporation of New York City, to offer fellowships to outstanding students who are pursuing advanced studies at the Graduate School.

Association of Electrical Contractors, Inc. Fellowship (1969) Established by the Association of Electrical Contractors, Inc. of New York City, New York, to offer a fellowship stipend to an outstanding graduate student.

George Barr Fellowship Endowment (1966) Established by Mr. George Barr of Illinois, to aid a gifted graduate student.

Charles C. Bassine Fellowship (1961) Established in honor of Mr. Charles C. Bassine of New York City by the Trustees of the Long Island Jewish Hospital on the occasion of his induction as a Fellow of the University, to be used to provide fellowship assistance for outstanding graduate students.

Beatrice Foods Company Fellowship (1962) Established through the generosity of the Beatrice Foods Company of Chicago, Illinois, to provide fellowship aid for gifted graduate students.

Louis D. Beaumont Foundation Fellowship (1968) A grant from the Louis D. Beaumont Foundation of Cleveland, Ohio, to provide fellowship support for gifted graduate students.

Beech-Nut Life Savers, Inc. Fellowship (1962) Established to support fellowship assistance for deserving graduate students through a grant from Beech-Nut Life Savers, Inc. of New York City.

David and Paula Ben-Gurion Israeli Fellowship Fund (1967) Established by Brandeis University in honor of their fiftieth wedding anniversary, to enable an Israeli graduate student to spend a year at Brandeis.

Samuel J. Bernstein Fellowship (1967) Established by Leonard Bernstein in honor of the seventy-fifth birthday of his father, Samuel J. Bernstein, to aid a graduate student in Judaic Studies.

Allan I. Bluestein Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, to assist deserving students in the field of the humanities, particularly in literature, history and language.

Jacob and Rachel Bluestein Memorial Fellowship (1960) Established by Allan I. Bluestein through the Jacob Bluestein Foundation, Inc. of New York, in memory of his parents, to assist gifted students in the field of the humanities.

Brandeis University-Bethune-Cookman College Fellowship (1969) An annual fellowship to be granted to a gifted graduate of Bethune-Cookman College, Daytona Beach, Florida, for advanced study at Brandeis University Graduate School of Arts and Sciences.

David Brenner Fellowship Fund (1961) An annual fellowship for a deserving graduate student in the social sciences, preferably from abroad and from a newly developing area or country.

Otto and Mynette Bresky Fellowship Endowment (1962) Established by Mr. and the late Mrs. Otto Bresky of Newton, Massachusetts, the income of which will help to subsidize the graduate education of a gifted and worthy student.

Harry and Esther Brown Fellowship (1963) Established by Mr. and Mrs. Harry Brown of Haverhill, Massachusetts, to provide assistance to a graduate student in the Lown Institute for Contemporary Jewish Studies.

Morris Burg Teaching Fellowship (1957) Established by Mrs. Mildred H. Burg of Brookline, Massachusetts, in memorial tribute to her husband, to support a teaching fellowship in the area of human relations.

Milton H. Callner Fellowship Fund (1966) Established with funds provided under the will of Milton H. Callner, late of Chicago, Illinois, supplemented with matching funds from the Ford Foundation grant, the income to be used for annual fellowships in international affairs or politics.

Campbell Soup Fellowship (1968) Granted by the Campbell Soup Company, Camden, New Jersey, as part of its Aid to Education Program, to help worthy and deserving graduate students.

Sol Cantor Fellowship (1963) Established as a memorial tribute to his mother, Mrs. Pearl Cantor, by Sol Cantor of New York. This fund will provide assistance to needy and promising graduate students.

Joseph and Frances Reitman Caplan Fellowship Endowment (1965) Established in memory of her husband by Frances Reitman Caplan of New York City, the income to be used for the assistance of deserving students and for the promotion of studies that are preparation for a legal career, with special emphasis in the field of international law.

Celanese Fibers Marketing Company Fellowship (1969) To be granted to an outstanding student at the Graduate School of Arts and Sciences.

Celanese Plastics Company Fellowship (1968) Granted by the Celanese Plastics Company to award a fellowship in Political Science to an outstanding student.

Patrick J. Clifford Scholarship and Fellowship Program (1968) Established to honor Patrick J. Clifford, to aid outstanding students.

Patrick J. Clifford Fellowship (1970) Granted by Mr. Patrick J. Clifford of Huntington, Long Island, to offer fellowship aid to an outstanding graduate student.

Aida Coburn Fellowship (1964) Established in honor of his wife by the late Abbot Coburn of Chicago, Illinois. This fellowship will provide partial assistance to a deserving graduate student.

Maxfield J. and Lillian R. Cohen Fellowship Endowment (1965) Established by Mrs. Lillian R. Cohen of Los Angeles, California, in loving tribute to her late beloved husband, Maxfield J. Cohen. The income from this fund will provide assistance to graduate students selected by the University to help them complete advanced training.

Rose and Joseph H. Cohen Fellowship (1962) Established under the terms of a bequest of Joseph H. Cohen, late of New York. The income will provide assistance for students doing their advanced work in Judaic Studies at Brandeis University.

Jack Cohn Memorial Science Fellowships (1962) Established by the Artists Foundation, Inc. of New York City (Mr. Robert Cohn, President), in memory of the late Jack Cohn, to provide three fellowships annually on the basis of merit and need, to students enrolled in the Graduate School in the area of science.

Consolidated Electric Construction Company Fellowship (1969) Established by Messrs. Monte and William Hurowitz of New York City, to offer fellowship aid to an outstanding graduate student.

Leon J. Coslov Fellowship (1957) Established by Mr. Leon J. Coslov of Glassport, Pennsylvania, to support a teaching fellowship.

Joan Crawford Fellowship in Theater Arts (1968) Established by friends and colleagues of Miss Crawford in honor of her induction as a Fellow of Brandeis University. To be awarded to an outstanding Theater Arts graduate student.

The Irving and Rose Crown Fellowships in American Studies (1969) Established by the Crown families of Chicago, Illinois, and the Arie and Ida Crown Memorial. This generous endowment will offer fellowships to outstanding graduate students who are concentrating in American Studies.

Dan Danciger Graduate Fellowship Trust Fund (1958) Established through a bequest from the estate of the late Dan Danciger of Fort Worth, Texas, to provide fellowship assistance for graduate students of outstanding academic potential to enable them to pursue academic careers regardless of financial limitations.

Joseph and Sadie Danciger Fellowship Endowments (1967) To be granted to a student in the Philip W. Lown Graduate Center for Contemporary Jewish Studies who is engaged in Jewish communal service and educational work or pursuing research in Contemporary Jewish Studies. Established by a grant from Testamentary Trust under Will of Sadie Danciger, deceased, of Tucson, Arizona.

Frank J. Doft Memorial Fellowship Endowment (1965) Established as a memorial to their son and brother by the Doft Family of Lawrence, Long Island, New York. The income will provide fellowships for deserving graduate students who are concentrating in the life sciences.

Durkee Graduate Fellowship in Biochemistry (1962) A graduate fellowship established by Durkee Famous Foods, Div. SCM Corporation, for support of a deserving graduate student in Biochemistry. This fellowship will provide a grant to the student, payment of tuition and an allowance for each dependent.

Eagle Food Centers Foundation Fellowship (1962) Established through the generosity of the Eagle Food Centers Foundation of Rock Island, Illinois, to subsidize gifted graduate students.

The Esther Eig Fellowship Fund (1967) Established by Mr. Samuel Eig of Gaithersburg, Maryland, to assist graduate students.

Ekco Containers, Inc. Fellowship (1962) Established by Ekco Containers, Inc. of Wheeling, Illinois, to provide fellowship assistance to deserving students.

Max and Frances Elkon Fellowship Endowment (1962) Established by Mr. and Mrs. Max Elkon of New York City. The income to be used to provide fellowship assistance for gifted graduate students.

Meyer Factor Fellowship (1963) Established by Harold E. Factor of Chicago, Illinois, to provide fellowship assistance to gifted and needy graduate students.

Leonard L. Farber Fellowship in Urban and Regional Studies (1967) Established by friends and business associates to promote graduate study in these fields.

Bonnie Feiner Memorial Fellowship (1969) To be granted to an outstanding graduate student who is doing research in the medical sciences, preferably in the field of cancer. Established in loving memory of their young daughter by Barry B. Feiner '56 and Ellen Feiner '57 of New York City.

Harold L. Fierman Fellowship (1969) Granted by Mrs. Harold L. Fierman of New York City in honor of the induction of her husband as a member of the Board of Trustees of Brandeis University, to be used for graduate study at the Fierman School of Chemistry.

Nathan and Vivian Fink Fellowship (1963) Established by Mr. and Mrs. Nathan Fink of New York, to help subsidize a gifted graduate student in the Lown Institute for Contemporary Jewish Affairs.

First Interoceanic Corporation Fellowship (1970) Granted by Mr. Dwayne Andreas of First Interoceanic Corporation of Minneapolis. To offer fellowship stipends to outstanding graduate students.

Henry F. Fischbach Fellowship Fund (1967) Established by the family of Henry F. Fischbach of New York to honor his seventy-fifth birthday. This endowment trust will support an interchange of graduate students between the Israel Institute of Technology (Technion) and Brandeis University.

Mr. and Mrs. Gus Fisher Fellowship (1966) Established to honor Mr. and Mrs. Gus G. Fisher, Miami Beach, Florida, by offering assistance to a student doing his or her graduate work.

Charlotte and Elliot Fleisher Fellowship Endowment (1966) Established by Mr. and Mrs. Elliot Fleisher of Newton, Massachusetts. The income to be used to provide fellowship grants to aid young men and women of unusual talent or potential to pursue graduate studies within any academic department of the University or within any disciplinary program.

F. Julius Fohs Memorial Tuition Fellowship (1967) Established by the Fohs Foundation of Roseburg, Oregon, to benefit an Israeli student concentrating in the applied sciences.

Harry K. and Emma R. Fox Charitable Foundation Fellowship (1962) Established by the Harry K. and Emma R. Fox Charitable Foundation of Cleveland, Ohio, to support a partial fellowship for a deserving graduate student who, without this assistance, would be unable to complete his advanced studies.

General Foods Fund Fellowship Grant (1961) Established by the General Foods Fund, Inc. of New York City, for fellowship assistance to outstanding graduate students who are concentrating in the area of the life sciences.

Leo Gerstenzang Science Fellowship Endowment Fund (1962) Established by his wife of New York City and Palm Beach, Florida, in memory of her late husband. The income will be used for fellowships to subsidize graduate education and research for deserving graduate students in the field of science.

Gillette Graduate Teaching Fellowships (1967) Created by the Gillette Company of Boston to provide tuition and living stipends for five doctoral candidates in the sciences.

Arnold L. Ginsburg Political Science Fellowship (1968) Granted by Mr. Arnold L. Ginsburg of New York City to aid worthy graduate students concentrating in political science.

Harry and Elka Gitlow Fellowship Endowment in Humanistic Studies (1959) Established by Mr. Albert Gitlow of New York City and members of the family as a memorial tribute.

Albert A. Glassman Fellowship (1962) Established by a bequest of Albert A. Glassman, late of Cleveland, Ohio. This fund will be used for research in the field of medicine or biochemistry.

Pincus Glickman Fellowship in Judaic Studies (1957) An endowment established by Louis J. Glickman of New York City in memory of his father and augmented through gifts of friends and associates, the income to support the teaching of an advanced graduate student.

Beatrice I. and Jacob Goldberg Fellowship Endowment Fund (1962) Established by Mr. and Mrs. Jacob Goldberg of Brookline, Massachusetts, in honor of their fiftieth wedding anniversary. The income from this fund is to be used to support fellowships.

Mollie Goldberg Memorial Fellowship Endowment (1963) Established as a memorial tribute by Isadore J. Goldberg of Chicago, and Milton D. Goldberg of Glencoe, Illinois. The income will be used to provide an annual fellowship for a deserving student in the Florence Heller Graduate School for Advanced Studies in Social Welfare.

Alexander Goldstein Teaching Fellowship in Social Science (1950) The income from this fund will be used to support a teaching fellowship in the field of social science. Established as a memorial to her brother by the late Miss Lutie Goldstein of San Francisco, California.

Edward Goldstein Teaching Fellowship (1954) A grant from Mr. Edward Goldstein of Boston, Massachusetts, to support a teaching fellowship.

The Samuel Goldwyn Life Science Fellowships (1970) Established by the Samuel Goldwyn Foundation of Los Angeles to provide aid to gifted graduate students in the life sciences. Preference is to be given to foreign born, needy applicants who are seeking advanced study in the United States.

Barnett D. Gordon Fellowship (1968) Established by Mr. Barnett D. Gordon of Chestnut Hill, Massachusetts, to help subsidize a deserving graduate student.

Mr. and Mrs. Ben Gordon Fellowship (1963) Established by Mr. and Mrs. Ben Gordon of Harrison, New Jersey, to provide fellowship assistance for deserving graduate students.

The James Gordon Grant for Government Fellowship (1967) Established by the James Gordon Grant for Government of Chicago, Illinois, to aid qualified fellows in this field.

Maurice Gordon Music Fellowship Endowment (1966) Established by Mr. Maurice Gordon, Newton, Massachusetts, to provide fellowships for students with preference given to those majoring in music.

Paul and Hattye Gordon Fellowship in Social Sciences for Graduate Students (1969) Granted by Mr. Paul R. Gordon of Miami Beach, Florida. The income to be used for financial assistance to graduate students in the area of social sciences.

Grace Foundation Fellowship in Chemistry (1967) Established by the Grace Foundation of New York for advanced work in teaching and research in chemistry.

M. Brenn Green Fellowship in Psychology (1967) Established by Mr. M. Brenn Green of New York to offer fellowship assistance to a deserving graduate student working for a Ph.D. in psychology.

Anna C. Greenstone Memorial Fellowship (1952) Established by her children, Mr. Charles R. Greenstone of San Francisco, California, the late Mr. Stanford M. Green of San Francisco, California, and Mrs. Simon Rubin of New Bedford, Massachusetts.

Leo Haas and Irene Haas Tuition Fund Fellowship (1967) Established through a bequest of the late Leo Haas of Tucson, Arizona, the income to be used for needy graduate students.

Hanigsberg, Delson and Broser Fellowship (1970) Granted at the request of Mr. George Delson of the above firm, New York City. To offer fellowship assistance to outstanding graduate students.

Edward Hano Fellowship Endowment (1958) The income from this fund is to provide supplementary fellowship assistance to gifted graduate students enrolled in the School for Advanced Studies in Social Welfare. A tribute to the late Edward Hano of Granby, Massachusetts, by his wife and members of the family.

Sylvia Harris Fellowships (1967) Established by the Joseph Harris Foundation of New York as a memorial to Sylvia Harris, to offer fellowship aid to deserving graduate students majoring in Theater Arts.

Hartog of California Graduate Fellowship Fund (1961) Established by Hartog of California, to help a graduate student interested in the field of the History of Ideas.

Edwin E. Hokin Teaching Fellowship Endowment (1967) Established by his friends in honor of Edwin E. Hokin of Chicago, Illinois, becoming a Fellow of the University. The income will provide assistance for deserving graduate students.

M. Z. and Hannah Holland Fellowship Endowment (1964) Established by the family and friends of Mr. and Mrs. M. Z. Holland of Chicago, Illinois, to honor their fiftieth wedding anniversary and, also, Mr. Holland's seventy-seventh birthday. The income from this fund will offer assistance to deserving graduate students.

Benjamin S. and Ida F. Hornstein Fellowships (1966) Established by Mr. and Mrs. Benjamin S. Hornstein of New York. The income will provide fellowship assistance for either worthy students who are concentrating in the area of Judaic studies, or to aid in the publication of research studies in the field of Judaic culture and education.

Peter A. Isaacson Fellowship in the Lown Institute for Contemporary Jewish Studies (1963) Established by Mr. Peter A. Isaacson of Lewiston, Maine, for gifted students concentrating in the field of Judaic studies.

The Louis Isenberg Fellowship (1963) Established in the Lown Institute of Contemporary Jewish Studies by Louis Isenberg of Brookline, Massachusetts, in memory of Alice Isenberg. To provide assistance for graduate students who are concentrating in this area.

Max Jacoby Fellowship Endowment in Judaic Studies (1967) Established by Mrs. Belle Jacoby of New York in memorial tribute to her husband, the income to provide fellowships for graduate students in the field of Judaic Studies.

Jewish Community Centers of Chicago Fellowship (1968) Granted by their Board of Directors to offer scholarship aid to a student who is enrolled at the Florence Heller School for Advanced Studies in Social Welfare.

Jewish Community Center of Hunts Point, Bronx, New York Fellowship Endowment (1962) Established by the Trustees of the Jewish Community Center of Hunts Point, New York, so that the income may be used for gifted and worthy graduate students who are concentrating in the history and literature of traditional Judaism. Preference is given to students who come from the metropolitan New York area.

Max Kagan Fellowship (1962) Established by Mr. Max Kagan of Bangor, Maine, in support of a deserving graduate student at the Philip W. Lown Institute of Advanced Judaic Studies.

Sidney Kahn Fellowship (1970) Granted by Mr. Sidney Kahn of New York City, to offer fellowship assistance to an outstanding graduate student.

Charles L. Kangesser Fellowship (1968) Established through a bequest from the estate of Charles L. Kangesser, late of Cleveland, Ohio, to help subsidize a gifted and needy graduate student.

Robert E. and Harry A. Kangesser Fellowship Trust (1951) Established by Messrs. Robert E. and Harry A. Kangesser of Cleveland, Ohio, the income to be used for teaching fellowships.

Kaplan-Turner Fellowship (1965) Established by Charles H. Kaplan and Justin G. Turner of Beverly Hills, California, in memory of Maurice Turner. To assure the availability of funds primarily for the publication needs of the University's library.

Henry Kaufmann Fellowship Endowment in Group and Community Development (1964) Established by the Henry Kaufmann Foundation, Judge Joseph M. Proskauer, Norman S. Goetz, and Samuel Lemberg, all of New York City. The income from this endowed fellowship will support the teaching activities of a faculty member whose doctoral students are specializing in the problems of small groups, neighborhood organizations, and group and community development.

Kaye, Scholer, Fierman, Hays and Handler Fellowship (1970) Granted by the above law firm of New York City, to offer fellowship aid to an outstanding graduate student.

Theodore W. Kheel Fellowships (1969) Granted by Mr. Theodore W. Kheel of New York City to offer fellowship assistance to outstanding students who are undertaking advanced studies at the Graduate School.

Jack Kirsch Biochemistry Fellowship (1963) Established by the Jane Coffin Childs Memorial Fund for Medical Research to offer fellowship assistance to deserving students in the field of biochemistry.

Richard Kramer Memorial Fellowship (1961) Established in memory of their son, Richard, by Mr. and Mrs. Louis Kramer of Philadelphia, Pennsylvania, to help subsidize a graduate student concentrating in the field of biochemistry.

Lillian Kratter Fellowship (1960) Established in her honor by her husband, Mr. Marvin Kratter of New York City, to be assigned to a female student concentrating in the Graduate School of Music.

Marvin Kratter Fellowship (1960) Established in his honor by his wife, Mrs. Lillian Kratter of New York City, to be assigned to a male student concentrating in the graduate area of biology.

Hyman Kuchai Fellowship (1963) Established by Mr. Hyman Kuchai of Harrison, New York, to provide fellowship assistance for deserving graduate students.

Joseph Kurzon Fellowship (1969) Established by Mr. Joseph Kurzon of New York City, to offer fellowship aid to an outstanding graduate student.

Carl Laemmle Fellowship (1967) Established through a bequest from the estate of Rosabelle L. Bergerman, late of California, daughter of the late Carl Laemmle. To offer fellowship assistance to worthy graduate students.

William Lakritz Fellowship Endowment in Chemistry (1962) Established by the daughters of William Lakritz of New York City and their husbands, Mr. and Mrs. Jack N. Friedman of Glencoe, Illinois, and Dr. and Mrs. Henry Graham of Los Angeles, California, to be used in partial subsidy of graduate students who concentrate in the field of chemistry.

Lapkin Foundation Fellowship (1970) Granted by the Lapkin Foundation of New York City, to provide fellowship stipends to outstanding and deserving graduate students.

Samuel J. Levy Fellowship (1970) Granted by Mr. Samuel Levy of New York, to offer fellowship assistance to outstanding graduate students.

Dr. Meno Lissauer Teaching Fellowship in Natural Science (1957) Set up through a major gift by the late Dr. Meno Lissauer of New York City and the birthday tributes of his colleagues in the Metals and Mining Industry.

Loewy Family Foundation, Inc. Fellowship (1970) Granted by the Loewy Family Foundation of New York City. To offer fellowship aid to outstanding graduate students who are engaged in research in the physical sciences, preferably in hydraulics and related fields.

P. Lorillard and Company Fellowship (1962) Established through the P. Lorillard and Company of New York City to help subsidize the education of gifted students to complete their graduate program.

Anna R. Lown Memorial Fellowship in Near Eastern and Judaic Studies (1967) Granted by Dr. and Mrs. Bernard Lown and Mr. and Mrs. Leon H. Fischman to support outstanding graduate students concentrating in Near Eastern and Judaic Studies.

Philip W. Lown Fellowship in American Jewish Studies (1969) Given by Mr. Philip W. Lown, Trustee of the University. To be awarded annually to advanced students in the Philip W. Lown School of Near Eastern and Judaic Studies.

Charles Lubin Fellowship (1963) Established at the annual Chicago dinner by a group of his friends to honor Mr. Charles Lubin. This scholarship will provide assistance to a deserving student.

The Dr. Isador Lubin Scholarship and Fellowship Endowment (1966) Established by his family and friends for the assistance of either undergraduate or graduate students needing aid to enter or continue their studies at Brandeis.

Theodore Roosevelt McKeldin Fellowship (1957) Established by friends of former Governor McKeldin as a tribute to him. To be used to subsidize gifted graduate students who plan to concentrate in the areas of political science and government.

Abraham Mendelowitz Fellowship Endowment Fund (1959) Established by the Millinery Workers Health and Welfare Fund in honor of Mr. Abraham Mendelowitz of New York City on the occasion of his sixty-fifth birthday. To subsidize outstanding scholars so that they may continue their studies and medical research in biochemistry and microbiology.

Charles E. Merrill Trust Fellowship (1960) Established by the Charles E. Merrill Trust of Ithaca, New York, to assist graduate students in Judaic Studies.

Morris Messing Fellowship (1964) Established by Mr. Morris Messing of Nutley, New Jersey, to provide fellowship assistance for deserving graduate students.

Joseph Millman Memorial Foundation Fellowship (1964) Established by the Joseph Millman Memorial Foundation of Villas, New Jersey, through Mr. Stanley Rappaport. This fund will provide fellowship assistance for a gifted graduate student. Preference is to be given to applicants who are residents of Cape May County, New Jersey.

Bernard and Marjorie Mitchell Fellowship (1967) Given by Mr. and Mrs. Bernard A. Mitchell of Chicago, Illinois, to aid a worthy graduate student in the field of humanities.

Herman Muehlstein Fellowship Fund (1966) Established by the Herman Muehlstein Foundation to provide graduate study for a student or students preparing for social welfare careers. Preference to be given to students coming from the New York area.

National Biscuit Company Fellowship (1962) A grant from the National Biscuit Company of New York City to provide fellowship support for deserving graduate students.

National Furniture Fellowship in Economics (1967) Established by leaders in the Furniture Industry to support graduate study.

Thomas Newman Fellowship (1970) Granted by Mr. Thomas Newman of Rye, New York, to offer fellowship assistance to outstanding graduate students.

David K. Niles Teaching Fellowship in American Government (1957) To be assigned in memory of a Trustee of the University, who served with distinction as administrative assistant to President Roosevelt and President Truman, for a worthy graduate student who plans for a career in American government service.

Lillian Persky Palais Endowment Fellowship (1960) Established by Mr. and Mrs. Abraham S. Persky of Worcester, Massachusetts, in memory of Mr. Persky's sister, as an endowment whose income in perpetuity is to subsidize the tuition of gifted graduate students so that they may complete their science training.

Arnold Picker Fellowship in the Theater Arts (1968) Established by Arnold M. Picker of New York City to support the graduate program in theater arts.

Frank C. Pierson Fellowship (1966) Established by Mr. Frank C. Pierson of Swarthmore, Pennsylvania, to assist a graduate student majoring in politics.

Albert and Selma F. Pilavin Fellowship Endowment (1966) Established by Mrs. Albert Pilavin of Providence, Rhode Island, to be assigned to the Theater Arts Department, preferably to a graduate student interested in playwrighting.

Polaroid-Teger Fellowship (1967) Established by the Polaroid Corporation, Cambridge, Massachusetts, in memory of John Teger, former executive at Polaroid and graduate student at the Florence Heller School, to be awarded annually to a student in social gerontology.

Maurice Pollack Foundation Research Fellowship (1956) Established by the Maurice Pollack Foundation of Quebec, Canada, to enable gifted graduate students to pursue research programs in the field of Judaic Studies.

Prince Macaroni Manufacturing Company and the Cleghorn Folding Box Company Fellowship (1962) Established to provide fellowship assistance to deserving graduate students by the Prince Macaroni Manufacturing Company and its subsidiary, the Cleghorn Folding Box Company, of Lowell, Massachusetts.

Norman S. Rabb Fellowship (1967) Established by an act of the Board of Trustees of Brandeis University as a tribute to Mr. Norman Rabb's service as Chairman of the Board of Trustees.

Sidney H. Rabinowitz Memorial Fellowship Endowment (1963) Established by the friends of Sidney H. Rabinowitz in order to perpetuate the spirit of his feeling for his fellow man. The income from this fund will be used to provide fellowship assistance for gifted graduate students in the Humanities.

Minna and Benjamin M. Reeves Fellowship Endowment (1962) Established by Mr. and Mrs. Benjamin M. Reeves of New York City, the income to support the teaching of an advanced graduate student.

Bertha C. Reiss Memorial Fellowship Endowment Fund (1954) Created by the late Dr. Henry Reiss of New York City for the establishment of the Bertha C. Reiss Memorial Fellowship or teaching fellowships. Awards are to be made to students on the basis of their accomplishments in the field of research and/or teaching.

Charles Revson Fellowship Trust (1962) A capital fund established by Charles Revson of New York City, to be assigned to outstanding students who wish to pursue their graduate studies in the areas of biochemistry, chemistry, physics, biophysics, mathematics or psychology.

Meshulam and Judith Riklis Fellowships (1970) Granted by Mr. and Mrs. Meshulam Riklis of New York City, to offer fellowship stipends to outstanding and worthy scholars at the Graduate School of Arts and Sciences.

Benjamin Rosenberg Teaching Fellowship Endowment (1959) Established as a memorial tribute by Mr. and Mrs. Joseph Rosenberg of Fox Point, Wisconsin, to support a teaching fellowship in the field of Polymer Chemistry.

Leo L. Rosenhirsch Memorial Fellowship Fund (1961) Established by Mr. Alfred E. Rosenhirsch and Mrs. Hilda Nussenfeld of New York City to help cover tuition and other expenditures for gifted and needy graduate students.

Edwin M. Rosenthal Teaching Fellowship in the Life Sciences (1961) Established to honor the eighty-second birthday of Edwin A. Rosenthal of Hollywood, Florida, by his daughter, Mrs. Hoke Levin of Detroit, Michigan, to be assigned as a teaching fellowship for a graduate student concentrating in the life sciences.

Julius Rosenwald Teaching Fellowships (1952) A series of teaching fellowships in memory of the distinguished philanthropist, Julius Rosenwald, established by his daughter, the late Mrs. Adele Rosenwald Levy of New York City, to subsidize the development and teaching of gifted graduate students.

Dr. Vera Rubin Fellowship (1960) Established by Dr. Vera Rubin of New York City for a fellowship in the field of anthropology.

Abram L. Sachar Fellowship (1961) Established by B'nai B'rith in honor of the Honorary Chairman of the National Hillel Commission, to underwrite part of the expenses for a gifted student at Brandeis University who joins the Hiatt Institute in Israel to strengthen background in Israeli Studies.

Israel Sachs Teaching Fellowship in Social Relations (1952) Established by his wife and children in his memory.

Dr. Harry Sagansky Fellowship Trust (1963) Established by Dr. Harry Sagansky of Brookline, Massachusetts, to be used for subsidies to graduate students so that they may be helped in the completion of their specialized training.

Samuel and Rae Salny Fellowship Endowment in Social Relations (1952) Established by Mrs. Samuel M. Salny and the late Mr. Salny of Boston, Massachusetts, to support a fellowship in the field of social relations.

Shirley and Maurice Saltzman Fellowship Endowment Fund (1961) Established by Mr. and Mrs. Maurice Saltzman of Cleveland, Ohio, so that the income may be assigned to gifted and advanced students who are concentrating in the humanities.

Shirley and Maurice Saltzman Fellowship Endowment in the Fine Arts (1966) Established by Mr. and Mrs. Maurice Saltzman of Cleveland, Ohio, so that the income may be assigned to gifted and advanced students who are concentrating in the Fine Arts.

Honorable Howard J. Samuels Fellowship (1968) Granted by the Honorable Howard J. Samuels, former Undersecretary of Commerce, to offer fellowship assistance to worthy graduate students.

Samuel D. and Goldie Saxe Fellowship in Science (1955) Established by Mrs. Goldie Saxe of Brookline, Massachusetts, and children, to support research and teacher training in the field of science.

Edward A. Schaffer Teaching Fellowship Endowment (1959) Established by his wife in memorial tribute, to support a teaching fellowship in the field of humanistic and social sciences.

Alice Boughton Schaffner Memorial Fellowship Endowment (1961) Established under the terms of the will of the late Alice Boughton Schaffner by her designators, Winifred Raushenbush and James Rorty. The income from this fund will be used to provide fellowship support for outstanding women students from racially underprivileged families.

Rabbi Solomon Scheinfeld Fellowship Endowment (1959) Established by the Sylvia and Aaron Scheinfeld Foundation of Chicago, Illinois, as a memorial tribute to Mr. Scheinfeld's distinguished father. The income to be used for fellowship assistance to gifted graduate students, preferably from Wisconsin, in the School for Advanced Studies in Social Welfare.

Schneider Foundation Fellowship in Theater Arts (1968) Granted in honor of Miss Joan Crawford by Mr. Abraham Schneider, New York City. To offer financial assistance to a worthy student in the Graduate School of Theater Arts.

Joseph Schumer Fellowship Endowment Fund (1966) Established by a bequest in the will of Joseph Schumer, late of New York City, the income of which will provide Joseph Schumer Fellowships for needy and gifted students in music.

Ida Hillson Schwartz and Elias Edward Schwartz Memorial Fellowship Endowment Fund (1949) Established as a memorial to Ida Hillson Schwartz of Winter Hill, Massachusetts, by her family. The Fund has been augmented by a perpetuity as an exchange fellowship, either to bring gifted young people from Israel to Brandeis or to send Brandeis University students to the Hebrew University in Israel.

Morris Sepinuck Teaching Fellowship (1954) Created as a memorial to Morris Sepinuck by his children, Messrs. Samuel and Nathan Sepinuck, and Mrs. George Sorkin of Boston, Massachusetts.

Fannie and Simon Shamroth Fellowship Endowment (1963) Established by the children of Fannie and Simon Shamroth of Lynn, Massachusetts. The income from this fund will be used to help subsidize deserving graduate students.

Leonard Shanhouse Fellowship (1963) Established by Mr. Leonard Shanhouse of Magnolia, Arkansas, to provide fellowship assistance for deserving graduate students.

Robert Shapiro Fellowship in Theater Arts (1967) Established by the bequest of the late Robert Shapiro of New York, to be awarded annually for the next four years to graduate students in Theater Arts.

Isaiah Leo Sharfman Teaching Fellowship Endowment (1956) Established by Mr. and Mrs. Samuel R. Rosenthal of Highland Park, Illinois, in tribute to Professor Sharfman of the University of Michigan, with preference given to teaching fellows in the area of economics.

Bernard Shivek Memorial Fellowship Endowment (1967) Established in loving memory by the Shivek Family of Chestnut Hill, Massachusetts, the income to offer fellowship assistance to graduate students.

Mr. and Mrs. Abraham Smith Memorial Fellowship (1962) Established by Mr. Samuel Smith of Allentown, Pennsylvania, in memory of his parents, Mr. and Mrs. Abraham Smith, to provide fellowship assistance for worthy graduate students.

Charles E. Smith Family Fellowships (1969) Established by Mr. Charles E. Smith of Washington, D. C., the income of which will be granted to outstanding and needy graduate students.

Jack and Irene Hayes Solomon Foundation Fellowship Endowment (1962) Established by the Jack and Irene Hayes Solomon Foundation of New York City, the income to be used to support fellowships for gifted graduate students.

Sonneblich-Goldman Corporation Fellowship (1970) Granted at the request of Mr. Nathan Goldman of the above firm, New York City, to offer fellowship aid to an outstanding graduate student.

Mr. and Mrs. Harry Stadler Teaching Fellowship in Music (1956) Established by Mr. and Mrs. Harry Stadler of Hollywood, Florida, in memory of their loving mothers, Sarah Stadler and Etta Berger, to support a teaching fellowship in the field of music.

Joseph F. Stein Foundation, Inc. Fellowship (1959) Established by the Joseph F. Stein Foundation, Inc. through Mr. Joseph F. Stein of New York City, for fellowship study in the School of Advanced Studies in Social Welfare.

Sunshine Biscuits, Incorporated Fellowship (1962) Established through a grant from Sunshine Biscuits, Incorporated of Long Island City, New York, to provide fellowship assistance for deserving graduate students.

Gertrude W. and Edward M. Swartz Fellowship Endowment Fund (1954) Established by Mr. and Mrs. Edward M. Swartz of Brookline, Massachusetts, to support a teaching or research fellowship.

Syroco-Holstein Foundation, Inc. Fellowship (1966) Established by the Syroco-Holstein Foundation, Inc. of Syracuse, New York, to provide fellowship assistance to worthy graduate students.

David Tannenbaum Teaching Fellowship in Legal Institutions (1958) An endowment to honor the memory of David Tannenbaum of Beverly Hills, California, established by his friends and admirers.

Thanks to Scandinavia Fellowship (1969) Granted by the Thanks to Scandinavia, Inc. to offer fellowship aid to needy graduate students from any one of the Scandinavian countries.

Ben Tobin Teaching Fellowship (1955) Established by Mr. Ben Tobin of Hollywood, Florida, to support a fellowship in the field of science.

Universal Match Foundation Fellowship (1957) To be awarded to a graduate student, or students, who are concentrating in the fields of physics, chemistry, biochemistry or microbiology. Set up by the Universal Match Foundation of St. Louis, Missouri.

Edyth Usen Fellowship Endowment (1967) Established by Mr. and Mrs. Irving Usen of Newton, Massachusetts. The income will be assigned as a fellowship to a gifted and needy graduate student.

Harry Uviller Fellowship (1962) Established by friends and associates of Harry Uviller, in appreciation for his many years of distinguished service as an impartial arbitrator, and his many other contributions to the advancement of the needle trades industry and the preservation of industrial peace in New York. This fellowship will provide assistance to deserving graduate students.

Rose Mary Waga Fellowship Endowment (1964) Established by Mr. Peter E. Klein of Cleveland, Ohio, as Trustee to provide, in perpetuity, assistance to talented and needy students in the Graduate School.

Leo Wasserman Graduate Fellowship (1962) Established through a gift from the Leo Wasserman Foundation as a memorial to Leo Wasserman, late of Brookline, Massachusetts, the income to be devoted to the aid of graduate students in the humanities, the social sciences, and the field of social work.

Herman Weisselberg Memorial Fellowship (1957) Established as a memorial tribute by Mr. Arnold Weisselberg of Long Island City, New York, to support a fellowship.

Helen Hay Whitney Research Fellowship (1963) Established by the Helen Hay Whitney Foundation of New York to promote post-doctoral research.

Carrie Wiener Teaching Fellowship (1950) The income from this fund is to be used for a fellowship, established by Mr. Herman Wiener of Toledo, Ohio, in the name of his wife.

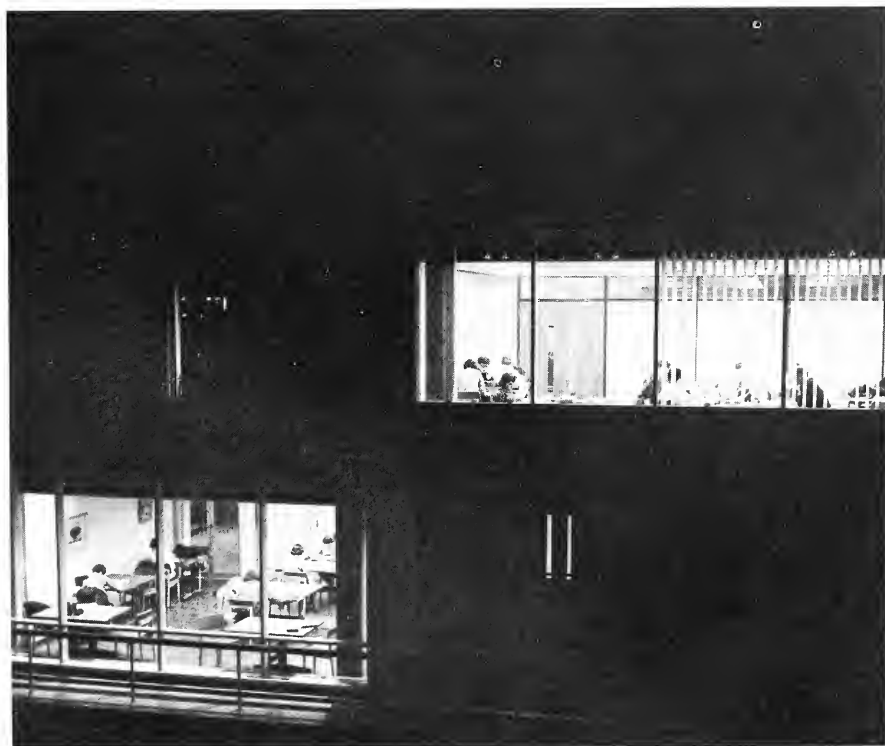
Clement Wilenchick Fellowship Fund in the Theater Arts (1966) Established under the terms of the will of Maria Wilenchick, late of New York, in memory of her son, Clement Wilenchick, who was a painter and an actor.

Leon G. Winkelman Fellowship Endowment Fund (1959) Established by the Leon G. and Josephine Winkelman Foundation of Detroit, Michigan, as a memorial tribute to Leon G. Winkelman, to subsidize a graduate fellowship in the field of gerontology.

The Leila G. Winton Music Composition Fellowship (1969) Established by Mr. Harold M. Winton of New York City. To be awarded to a graduating student, outstanding in the field of music composition, who plans to continue the study of music composition at the graduate level.

Woodbourne Company Fellowship (1970) Granted to the University to offer fellowship aid to an outstanding graduate student.

Paul Ziffren Fellowship (1962) Established by Mr. Paul Ziffren of Los Angeles, California, to provide fellowship assistance for worthy and deserving graduate students concentrating in the social sciences.





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 M.A., Harvard University

* On Leave, 1970-71.

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Ph.D., University of Virginia
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Ph.D., Harvard University
- *Joseph S. Berliner *Rosen Professor of Economics*
Ph.D., Harvard University
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° On Leave, 1970-71.

°°° On Leave, Spring Term, 1970-71.

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William J. Cloonan	<i>Visiting Assistant Professor of French</i>
Ph.D., University of North Carolina	<i>and Comparative Literature</i>
*Helen Codere	<i>Professor of Anthropology</i>
Ph.D., Columbia University	
Edward Cohen	<i>Assistant Professor of Music</i>
M.A., University of California, Berkeley	
H. Daniel Cohen	<i>Assistant Professor of Physics</i>
Ph.D., Stanford University	
Jacob Cohen	<i>Assistant Professor of American Civilization</i>
M.A., Yale University	
Jacques Cohen	<i>Assistant Professor of Physics</i>
Ph.D., University of Illinois	
Saul G. Cohen	<i>Breskin Professor of Chemistry</i>
Ph.D., Harvard University	
Andrée M. Collard	<i>Associate Professor of Spanish</i>
Ph.D., Harvard University	
Magdaline Conomos	<i>Visiting Lecturer in Voice and Speech</i>
B.S., Kent State University	
George L. Cowgill	<i>Associate Professor of Anthropology</i>
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Ph.D., Stanford University	
***Margaret Dalton	<i>Assistant Professor of Russian</i>
Ph.D., Harvard University	
Vladimir Dedijer	<i>Visiting Professor in the History of Ideas</i>
Ph.D., Belgrade University	
John Putnam Demos	<i>Associate Professor of History</i>
M.A., University of California, Berkeley	
Charles Derber	<i>Assistant Professor of Sociology</i>
A.M., University of Chicago	
Stanley Deser	<i>Professor of Physics</i>
Ph.D., Harvard University	
F. Trenery Dolbear, Jr.	<i>Associate Professor of Economics</i>
Ph.D., Yale University	
Paul B. Dorain	<i>Professor of Chemistry</i>
Ph.D., Indiana University	
Emily P. Dudek	<i>Adjunct Assistant Professor of Chemistry</i>
Ph.D., Radcliffe College	
*James E. Duffy	<i>Professor of Romance Literature and History</i>
Ph.D., Harvard University	
Arthur Edelstein	<i>Assistant Professor of English</i>
A.M., Stanford University	
David Eisenbud	<i>Lecturer and Research Associate in Mathematics</i>
M.S., University of Chicago	
Edward Engelberg	<i>Professor of English and Comparative Literature</i>
Ph.D., University of Wisconsin	

• On Leave, 1970-71.

••• On Leave, Spring Term, 1970-71.

- Herman T. Epstein *Professor of Biophysics*
Ph.D., University of Michigan
- Robert Evans, Jr. *Associate Professor of Economics*
Ph.D., University of Chicago
- Gerald D. Fasman *Professor of Biochemistry*
Ph.D., California Institute of Technology
(Established Investigator of the American Heart Association)
- Gordon A. Fellman *Associate Professor of Sociology*
Ph.D., Harvard University
- David Hackett Fischer *Professor of History*
Ph.D., Johns Hopkins University
- Michael Fishbane *Instructor in Hebrew and Biblical Studies*
M.A., Brandeis University
- Charles S. Fisher *Assistant Professor of Sociology*
Ph.D., University of California, Berkeley
- *Emanuel Flumere *Associate Professor of Physical Education*
M.Ed., Boston University
- Madeline J. Foley *Lecturer in Music and Artist-in-Residence*
M.S., Juilliard Graduate School
- Joseph Fontenrose *Visiting Professor of Classics*
Ph.D., University of California, Berkeley
(University of California, Berkeley)
- John R. Frederiksen *Assistant Professor of Psychology*
Ph.D., Princeton University
- **David M. Freifelder *Associate Professor of Biochemistry*
Ph.D., University of Chicago
- Eberhard Frey *Assistant Professor of German*
Ph.D., Cornell University
- Neil L. Friedman *Assistant Professor of Sociology*
Ph.D., Harvard University
- Lawrence H. Fuchs *Jaffe Professor of American Civilization*
Ph.D., Harvard University
- Chandler M. Fulton *Associate Professor of Biology*
Ph.D., Rockefeller Institute
- Joachim E. Gaehde *Wien Professor in the History of Fine Arts*
Ph.D., New York University
- John G. Gagliardo *Visiting Lecturer in History*
Ph.D., Yale University
- Stephen J. Gendzier *Associate Professor of French*
Ph.D., Columbia University
- Martin Gibbs *Professor of Biology*
Ph.D., University of Illinois
- William Gibson *Fannie Hurst Visiting Professor of Creative Literature*
- Donald B. Giddon *Adjunct Lecturer in Psychology*
Ph.D., Brandeis University
- Ira H. Gilbert *Assistant Professor of Astrophysics*
Ph.D., Harvard University

* On Leave, 1970-71.

** On Leave, Fall Term, 1970-71.

- David H. Gillespie *Assistant Professor of Biology*
Ph.D., University of Illinois
- Samuel Gitler *Jacob Ziskind Visiting Professor of Mathematics*
Ph.D., Princeton University
(*Instituto Politecnico Nacional, Mexico*)
- Nahum Norbert Glatzer *Lane Professor of Jewish History and Social Ethics*
Ph.D., University of Frankfurt
- James F. Goldberg *Assistant Professor of English*
M.A., Columbia University
- Kenneth H. Golden *Lecturer in Theater Arts*
M.A., New York University
- Sidney Golden *Fischbach Professor of Chemistry*
Ph.D., Harvard University
- Maynard Goldman *Consultant in Music*
B.Mus., Boston University
- Emanuel S. Goldsmith *Lecturer in Hebrew and Yiddish Literature*
M.H.L., Jewish Theological Seminary
- William M. Goldsmith *Assistant Professor of American Civilization*
Ph.D., Columbia University
- Jack S. Goldstein *Professor of Astrophysics*
Ph.D., Cornell University
- Cyrus H. Gordon *Foster Professor of Mediterranean Studies*
Ph.D., University of Pennsylvania
- James R. Green *Instructor in History*
B.A., Northwestern University
- Robert S. Greenberg *Assistant Professor of Philosophy*
Ph.D., University of Chicago
- *Peter Grippe *Avnet Professor of Sculpture*
- Marcus T. Grisaru *Associate Professor of Physics*
Ph.D., Princeton University
- **Eugene P. Gross *Avnet Professor of Physics*
Ph.D. Princeton University
- Allen R. Grossman *Associate Professor of English*
Ph.D., Brandeis University
- *Lawrence Grossman *Professor of Biochemistry*
Ph.D., University of Southern California
(*Career Award, National Institutes of Health*)
- *Ernest Grunwald *Professor of Chemistry*
Ph.D., University of California, Los Angeles
- Robert R. Gustavson *Instructor in Physical Education*
M.A., University of Connecticut
- *Benjamin Halpern *Professor of Near Eastern Studies*
Ph.D., Harvard University
- Martin Halpern *Associate Professor of Theater Arts*
Ph.D., Harvard University
- Charles Hampden-Turner *Visiting Lecturer in Sociology*
- Eugenia Hanfmann *Levin Professor of Psychology*
Ph.D., University of Jena

• On Leave, 1970-71.

•• On Leave, Fall Term, 1970-71.

- David A. Hanson *Lecturer in Russian*
A.B., Harvard University
- Victor Harris *Professor of English*
Ph.D., University of Chicago
- Elsie Hasskarl *Lecturer in Biology*
B.A., Lake Forest College
- Elie Hayon *Adjunct Associate Professor of Chemistry*
Ph.D., King's College, Durham University
- John F. Heckman *Assistant Professor of French and Comparative Literature*
Ph.D., Cornell University
- Peter Heller *Associate Professor of Physics*
Ph.D., Harvard University
- Michael J. Henchman *Associate Professor of Chemistry*
Ph.D., Yale University
- James B. Hendrickson *Professor of Chemistry*
Ph.D., Harvard University
- Maureen Heneghan *Assistant Professor of Costume Design*
- Maurice Hershenson *Associate Professor of Psychology*
Ph.D., Yale University
- Calvin Hicks *Assistant Professor of Sociology*
B.A., Drake University
- Donald Hindley *Associate Professor of Politics*
Ph.D., Australian National University
- Milton Hindus *Professor of English*
M.S., City College of New York
- Larry Hirschhorn *Instructor in Economics*
A.B., Brandeis University
- Harrison Hoblitzelle *Lecturer in English*
Ph.D., Columbia University
- Christoph Hohenemser *Assistant Professor of Physics*
Ph.D., Washington University
- Thomas C. Hollocher, Jr. *Associate Professor of Biochemistry*
Ph.D., University of Rochester
- Benjamin B. Hoover *Professor of English*
Ph.D., University of California, Berkeley
- David A. Horr *Assistant Professor of Anthropology*
Ph.D., Harvard University
- Laura Hourtienne *Assistant Professor of German*
Ph.D., Bryn Mawr College
- Everett C. Hughes *Professor Emeritus of Sociology*
Ph.D., University of Chicago
- John N. Hughes *Associate Professor of Physical Education*
Ed.M., Framingham State College
- Robert C. Hunt *Associate Professor of Anthropology*
Ph.D., Northwestern University
- Hugh E. Huxley *Visiting Professor of Biology and Biomedical Science*
Ph.D., Cambridge University
- Gerald N. Izenberg *Assistant Professor in the History of Ideas*
A.M., Harvard University

- Ray S. Jackendoff *Assistant Professor of English*
Ph.D., Massachusetts Institute of Technology
- David Jacobson *Assistant Professor of Anthropology*
Ph.D., University of Rochester
- William P. Jencks *Rosenstiel Professor of Biochemistry*
M.D., Harvard Medical School
- Peter C. Jordan *Associate Professor of Chemistry*
Ph.D., Yale University
- Lisel K. Judge *Associate Professor of Physical Education*
M.Ed., Northeastern University
- Julian N. Kanfer *Adjunct Associate Professor of Biochemistry*
Ph.D., George Washington University
- Rosabeth Moss Kanter *Assistant Professor of Sociology*
Ph.D., University of Michigan
- David Kaplan *Associate Professor of Anthropology*
Ph.D., University of Michigan
- Richard Katz *Assistant Professor of Psychology*
Ph.D., Harvard University
- Paul Kecskemeti *Visiting Professor of Sociology*
Ph.D., University of Budapest
- *Morton Keller *Proskauer Professor of Legal Institutions*
Ph.D., Harvard University
- **George A. Kelly *Associate Professor of Politics*
Ph.D., Harvard University
- Albert Kelner *Burg Professor of Microbiology*
Ph.D., University of Pennsylvania
- Christopher J. Kertesz *Lecturer in Italian and Comparative Literature*
M.A., University of Illinois
- Sonia Ketchian *Visiting Lecturer in Russian*
M.A., Harvard University
- Samuel Jay Keyser *Associate Professor of English*
Ph.D., Yale University
- Susan Kirkpatrick *Lecturer in Spanish*
A.M., Harvard University
- Lawrence E. Kirsch *Assistant Professor of Physics*
Ph.D., Rutgers University
- **James B. Klee *Associate Professor of Psychology*
Ph.D., University of Michigan
- **Attila O. Klein *Associate Professor of Biology*
Ph.D., Indiana University
- **Karen Wilk Klein *Assistant Professor of English*
Ph.D., Columbia University
- Robert Lincoln Koff *Associate Professor of Music and Artist-in-Residence*
B.Mus., Oberlin College
- Kenneth Kustin *Associate Professor of Chemistry*
Ph.D., University of Minnesota

* On Leave, 1970-71.

** On Leave, Fall Term, 1970-71.

*** On Leave, Spring Term, 1970-71.

- Ernest R. Lacheman *Adjunct Professor of Cuneiform Studies*
Ph.D., Harvard University
- James R. Lackner *Assistant Professor of Psychology*
B.Sc., Massachusetts Institute of Technology
- Frederic C. Lane *Visiting Professor of History*
Ph.D., Harvard University
- Robert V. Lange *Assistant Professor of Physics*
Ph.D., Harvard University
- *Walter V. Laqueur *Professor of History of Ideas and Politics*
- Robert J. Larner *Assistant Professor of Economics*
Ph.D., University of Wisconsin
- Hubert P. LeBlanc, Jr. *Lecturer in Physical Education*
A.B., Brandeis University
- Susan Leeman *Research Assistant Professor of Biochemistry*
Ph.D., Radcliffe College
- Louis Lefebvre *Hecht Professor of International Economics*
Ph.D., Massachusetts Institute of Technology
- I. R. Lehman *Visiting Professor of Biochemistry*
Ph.D., Johns Hopkins University
(Stanford University Medical Center)
- **Alan Lelchuk *Assistant Professor of English*
Ph.D., Stanford University
- James Lepowsky *Lecturer and Research Associate in Mathematics*
A.B., Harvard College
- ***Max Lerner *Richter Professor of American Civilization and Institutions*
Ph.D., Robert Brookings Graduate School
- Martin A. Levin *Assistant Professor of Politics*
Ph.D., Harvard University
- Harold I. Levine *Professor of Mathematics*
Ph.D., University of Chicago
- Jerome P. Levine *Professor of Mathematics*
Ph.D., Princeton University
- Lawrence Levine *Professor of Biochemistry*
Sc.D., Johns Hopkins University
(American Cancer Society Professorship)
- Norman E. Levine *Assistant Professor of Physical Education*
B.S., Bates College
- Alan L. Levitan *Assistant Professor of English*
Ph.D., Princeton University
- ***Denah L. Lida *Professor of Spanish*
Ph.D., University of Mexico
- David I. Lieberman *Assistant Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Henry Linschitz *Rubenstein Professor of Chemistry*
Ph.D., Duke University
- Peter Lipsitt *Visiting Assistant Professor of Fine Arts*
M.F.A., Yale University

° On Leave, 1970-71.

°° On Leave, Fall Term, 1970-71.

°°° On Leave, Spring Term, 1970-71.

Lawrence Lipson	<i>Lecturer in French</i>
M.Phil., Yale University	
Edgar Lipworth	<i>Professor of Physics</i>
Ph.D., Columbia University	
Joseph A. Litven	<i>Assistant Professor of Psychology</i>
Ph.D., Stanford University	
Lawrence Lockwood	<i>Lecturer in Spanish</i>
B.A., Dartmouth College	
Elaine P. Loeffler	<i>Assistant Professor of Fine Arts</i>
B.A., Smith College	
Harvey S. London	<i>Assistant Professor of Psychology</i>
Ph.D., Columbia University	
Farnsworth Loomis	<i>Rosenfield Professor of Biochemistry</i>
M.D., Harvard University	
John M. Lowenstein	<i>Professor of Biochemistry</i>
Ph.D., London University	
*Heinz M. Lubasz	<i>Associate Professor in the History of Ideas</i>
Ph.D., Yale University	
Joan D. Lukas	<i>Visiting Lecturer in Mathematics</i>
Ph.D., Massachusetts Institute of Technology	
*Joseph S. Lukinsky	<i>Assistant Professor and Director of Jewish Education</i>
Ed.D., Harvard University	
Alasdair MacIntyre	<i>Professor in the History of Ideas and Philosophy</i>
M.A., University of Manchester	
Roy C. Macridis	<i>Wien Professor of International Cooperation</i>
Ph.D., Harvard University	
Douglas R. Maddox	<i>Assistant Professor of Theater Arts</i>
M.F.A., Carnegie Institute of Technology	
Robert J. Maeda	<i>Assistant Professor of Fine Arts</i>
Ph.D., Harvard University	
Farahe Maloof	<i>Adjunct Associate Professor of Biochemistry</i>
M.D., Tufts College Medical School	
Robert A. Manners	<i>Professor of Anthropology</i>
Ph.D., Columbia University	
*William H. Matheson	<i>Associate Professor of French</i>
Ph.D., University of Michigan	
Teruhisa Matsusaka	<i>Professor of Mathematics</i>
D.Sc., Kyoto University	
John F. Matthews	<i>Associate Professor of Theater Arts</i>
A.B., University of Cincinnati	
(On the Schulman Foundation)	
Alan L. Mayer	<i>Professor of Mathematics</i>
Ph.D., Princeton University	
*Michael B. Mazur	<i>Assistant Professor of Fine Arts</i>
M.F.A., Yale University	
Leslie Ann McArthur	<i>Assistant Professor of Psychology</i>
M.S., Yale University	

- Marvin Meyers
Ph.D., Columbia University
Truman Professor of American Civilization
- Allen P. Mills, Jr.
Ph.D., Brandeis University
Assistant Professor of Physics
- Paul H. Monsky
Ph.D., University of Chicago
Associate Professor of Mathematics
- Charles W. Moore
M.F.A., Yale University
Associate Professor of Theater Arts
- Ricardo B. Morant
Ph.D., Clark University
Fierman Professor of Psychology
- Sidney Morgenbesser
Ph.D., University of Pennsylvania
Visiting Professor of Philosophy
- (Columbia University)
- *Ruth Schachter Morgenthau
Ph.D., Oxford University, England
Avnet Professor of Black African Studies
- E. Craig Morris
Ph.D., University of Chicago
Assistant Professor of Anthropology
- Leonard C. Mueller
M.A., University of Michigan
Instructor in Classics
- William T. Murakami
Ph.D., University of Southern California
Associate Professor of Biochemistry
- Pauli Murray
J.S.D., Yale Law School
Professor of American Civilization
- Peter B. Natchez
Ph.D., Harvard University
Assistant Professor of Politics
- Gordon D. Newby
Ph.D., Brandeis University
Assistant Professor of Mediterranean Studies
- Eric A. Nordlinger
Ph.D., Princeton University
Associate Professor of Politics
- Herbert Oberlander
Ph.D., Western Reserve University
Assistant Professor of Biology
- *Thomas O'Brien
Ph.D., Cornell University
Assistant Professor of Economics
- Irving Olin
M.A., Rutgers University
Associate Professor of Physical Education
- Gjerding Olsen
Ph.D., Harvard University
Assistant Professor of Biology
- Richard J. Onorato
Ph.D., Harvard University
Assistant Professor of English
- Richard S. Palais
Ph.D., Harvard University
Professor of Mathematics
- Alexander C. Parker
Ph.D., Oxford University
Visiting Professor of History
- (Queen's College, Oxford)
- Judith P. Pasqualucci
M.A., Michigan State University
Assistant Professor of Physical Education
- Hugh N. Pendleton, III
Ph.D., Carnegie Institute of Technology
Associate Professor of Physics

Frances S. Perkins	<i>Lecturer in Psychology</i>
M.Ed., Tufts University	
Robert J. Pero	<i>Visiting Assistant Professor of Fine Arts</i>
M.F.A., University of Iowa	
Robert P. Perrin	<i>Assistant Professor of Physics</i>
Ph.D., Massachusetts Institute of Technology	
Daniel Pershonok	<i>Visiting Lecturer in Psychology</i>
Ph.D., Harvard University	
William D. Phelan, Jr.	<i>Instructor in Sociology</i>
A.B., Harvard University	
Mordeca J. Pollock	<i>Assistant Professor of French</i>
Ph.D., Harvard University	
***Robert O. Preyer	<i>Professor of English</i>
Ph.D., Columbia University	
***Philip Rahv	<i>Professor of English</i>
Alan T. Ramsey	<i>Assistant Professor of Physics</i>
Ph.D., University of Wisconsin	
Harry Rand	<i>Adjunct Professor of Clinical Psychology</i>
M.D., Middlesex University Medical School	
Esther E. Rawidowicz	<i>Assistant Professor Emeritus of German</i>
Ph.D., University of Berlin	
O. Ralph Raymond, II	<i>Assistant Professor of Politics</i>
M.A., Harvard University	
Bernard Reisman	<i>Lecturer in American Jewish Communal Studies</i>
Ph.D., Brandeis University	
*Janine Reisman	<i>Lecturer in French</i>
A.B., Brandeis University	
*Karl M. I. Reisman	<i>Assistant Professor of Anthropology</i>
Ph.D., Harvard University	
Joshua Rifkin	<i>Instructor in Music</i>
M.F.A., Princeton University	
Norman Rizzi	<i>Instructor in Theater Arts</i>
Dwight R. Robinson	<i>Adjunct Assistant Professor of Biochemistry</i>
M.D., Columbia College of Physicians and Surgeons	
Marguerite S. Robinson	<i>Assistant Professor of Anthropology</i>
Ph.D., Harvard University	
John P. Roche	<i>Herter Professor of International Relations</i>
Ph.D., Cornell University	
Nicholas Rodis	<i>Professor of Physical Education</i>
Ed.M., American International College	
Larry Rosenberg	<i>Assistant Professor of Sociology</i>
Ph.D., University of Chicago	
Myron Rosenblum	<i>Professor of Chemistry</i>
Ph.D., Harvard University	
Gerald Rosenthal	<i>Associate Professor of Economics</i>
Ph.D., Harvard University	
George W. Ross	<i>Assistant Professor of Sociology</i>
M.Sc., London School of Economics	

* On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

- *Hugo Rossi *Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Joshua Rothenberg *Lecturer in Yiddish Literature*
M.A., Rutgers University
- Judith R. Rothschild *Assistant Professor of French*
Ph.D., Johns Hopkins University
- Murray Sachs *Professor of French*
Ph.D., Columbia University
- *I. Milton Sacks *Hillquit Professor of Labor and Social Thought*
Ph.D., Yale University
- *Benson Saler *Associate Professor of Anthropology*
Ph.D., University of Pennsylvania
- Ina Samuels *Visiting Lecturer in Psychology*
Ph.D., University of Michigan
- Peter M. Sander *Assistant Professor of Theater Arts*
M.F.A., Carnegie Institute of Technology
- Nahum M. Sarna *Golding Professor of Biblical Studies*
Ph.D., Dropsie College
- Mary-Lou Sayles *Instructor in Women's Physical Education*
B.S. in Ed., Northeastern University
- Jerome A. Schiff *Professor of Biology*
Ph.D., University of Pennsylvania
- Robert F. Schleif *Assistant Professor of Biochemistry*
Ph.D., University of California, Berkeley
- Peter E. Schmidt *Assistant Professor of Physics*
Ph.D., Columbia University
- William Schneider *Lecturer in Politics*
A.M., Harvard University
- Howard J. Schnitzer *Professor of Physics*
Ph.D., University of Rochester
- Barney K. Schwalberg *Assistant Professor of Economics*
Ph.D., Harvard University
- **Morris S. Schwartz *Gryzmish Professor of Human Relations*
Ph.D., University of Chicago
- Silvan S. Schweber *Professor of Physics*
Ph.D., Princeton University
- Robert T. Seeley *Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- William Chapin Seitz *Professor of Fine Arts*
Ph.D., Princeton University
- David Segal *Instructor in Hebrew and Medieval Jewish Studies*
M.A., Harvard University
- John W. Senders *Lecturer in Psychology*
A.B., Harvard University
- Richard Sennett *Assistant Professor of Sociology*
Ph.D., Harvard University

◦ On Leave, 1970-71.

◦◦ On Leave, Fall Term, 1970-71.

- ***Harold S. Shapero
A.B., Harvard University
Naumburg Professor of Music
- Marshall S. Shatz
M.A., Columbia University
Lecturer in History
- Ray A. Shepard
B.S., University of Nebraska
Assistant Professor of Afro-American Studies
- Seymour J. Shifrin
M.A., Columbia University
Professor of Music
- Michael I. Shub
Ph.D., University of California, Berkeley
Assistant Professor of Mathematics
- Murray Sidman
Ph.D., Columbia University
Visiting Lecturer in Psychology
- Andrew J. Silver
M.Sc., Massachusetts Institute of Technology
Lecturer in Theater Arts
- Marianna L. Simmel
Ph.D., Harvard University
Professor of Psychology
- Mitchell Siporin
Bloom Professor in Arts of Design
- Marshall Sklare
Ph.D., Columbia University
Professor of American Jewish Studies
- Philip E. Slater
Ph.D., Harvard University
Professor of Sociology
- Mary L. Small
B.S., Hampton Institute
Lecturer in Afro-American Studies
- John H. Smith
Ph.D., University of Illinois
Professor of English
- Roger Smith
B.A., King's College, Cambridge University
Assistant Professor in the History of Ideas
- *B. Zvi Sobel
Ph.D., New School for Social Research
Adjunct Associate Professor of Sociology
- Gerald L. Soliday
Ph.D., Harvard University
Assistant Professor of History
- Barbara L. Solow
Ph.D., Harvard University
Lecturer in Economics
- Frederic T. Sommers
Ph.D., Columbia University
Wolfson Professor of Philosophy
- Morris Soodak
Ph.D., Fordham University
Associate Professor of Biochemistry
- S. Susan Staves
Ph.D., University of Virginia
Assistant Professor of English
- Sidney I. Stecher
Ph.D., City University of New York
Assistant Professor of Psychology
- Colin Steel
Ph.D., Edinburgh University
Associate Professor of Chemistry
- *Maurice R. Stein
Ph.D., Columbia University
Potofsky Professor of Sociology
- Robert F. Stein
Ph.D., Columbia University
Assistant Professor of Astrophysics

• On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

- Raymond E. Stephens
Ph.D., Dartmouth College
Assistant Professor of Biology
- Robert Stevenson
D.Sc., Glasgow University
Professor of Chemistry
- Douglas J. Stewart
Ph.D., Cornell University
Associate Professor of Classics
- Ernest Stock
Ph.D., Columbia University
Lecturer in Politics
- Maurice Sussman
Ph.D., University of Minnesota
Professor of Biology
- Peter Swiggart
Ph.D., Yale University
Associate Professor of English
- Marie Syrkin
M.A., Cornell University
Professor Emeritus of Humanities
- Andrew G. Szent-Gyorgyi
M.D., University of Budapest
Professor of Biology
- Robert Szulkin
Ph.D., Harvard University
Assistant Professor of Russian
- Serge N. Timasheff
Ph.D., Fordham University
Professor of Biochemistry
- Caldwell Titcomb
Ph.D., Harvard University
Associate Professor of Music
- Ian A. Todd
Ph.D., University of Birmingham, England
Assistant Professor of Mediterranean Studies
- Anne Tolbert
B.A., City College of New York
Instructor in Dance
- Leo Treitler
Ph.D., Princeton University
Associate Professor of Music
- Thomas R. Tuttle, Jr.
Ph.D., Washington University
Associate Professor of Chemistry
- Milton I. Vanger
Ph.D., Harvard University
Associate Professor of History
- *** John van Heijenoort
Ph.D., New York University
Professor of Philosophy
- Michel Vergne
Agrégé de Lettres, Modernes, Université de Paris (Sorbonne)
Lecturer in French
- Helen Van Vunakis
Ph.D., Columbia University
Associate Professor of Biochemistry
(on a Research Cancer Award, National Institutes of Health)
- William R. Vitale
Ph.D., Columbia University
Assistant Professor of Chemistry
- * Samuel E. Wallace
Ph.D., University of Minnesota
Assistant Professor of Sociology
- Eugene V. Walter
Ph.D., University of Minnesota
Visiting Professor of Sociology
(University of Massachusetts, Boston)
- Ronald W. Walters
M.A., American University
Assistant Professor of Afro-American Studies

° On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

- Kenneth N. Waltz *Stevenson Professor of International Politics*
Ph.D., Columbia University
- *Aileen Ward *Professor of English*
Ph.D., Radcliffe College
- Joseph D. Warren *Visiting Lecturer in African and Afro-American Studies*
B.S., North Carolina A. & T. State University
- Lois Ann Wasserspring *Assistant Professor of Politics*
M.A., Princeton University
- Richard S. Weckstein *Marks Professor of Economics*
Ph.D., University of Wisconsin
- Alex Weingrod *Associate Professor of Anthropology*
Ph.D., University of Chicago
- John Weiss *Visiting Professor of History*
Ph.D., Columbia University
(*Lehman College, City University of New York*)
- Morris Weitz *Professor of Philosophy*
Ph.D., University of Michigan
- Michael Wentworth *Assistant Professor and Assistant Director of*
M.F.A., Harvard University *Rose Art Museum*
- David Westphal *Lecturer in Theater Arts*
- Brenda Ann Wiechmann *Instructor in Women's Physical Education*
M.Ed., South Dakota State University
- ***David S. Wiesen *Associate Professor of Classics*
Ph.D., Harvard University
- John Burt Wight *Lecturer in English*
Ed.D., Harvard University
- Rupert H. Wilkinson *Visiting Lecturer in History*
A.B., Harvard University
- Arthur Wingfield *Assistant Professor of Psychology*
Ph.D., Oxford University
- Peter Witt *Assistant Professor of American Civilization and*
Ed.D., Harvard University *Director of Education Program*
- *Jerome Wodinsky *Associate Professor of Psychology*
Ph.D., University of Texas
- ***Kurt H. Wolff *Yellen Professor of Social Relations*
Ph.D., University of Florence
- *Peter Woll *Associate Professor of Politics*
Ph.D., Cornell University
- Luis E. Yglesias *Assistant Professor of Spanish*
Ph.D., Harvard University
- Dwight W. Young *Associate Professor of Ancient Near Eastern Civilization*
Ph.D., Dropsie College
- Louis V. Zăbkar *Associate Professor of Mediterranean Studies*
Ph.D., University of Chicago
- George Zilzer *Consultant in Music*
M.A., Bennington College

* On Leave, 1970-71.

*** On Leave, Spring Term, 1970-71.

***Harry Zohn	<i>Professor of German</i>
Ph.D., Harvard University	
Irving K. Zola	<i>Associate Professor of Sociology</i>
Ph.D., Harvard University	
Edgar Zwillling	<i>Goodman Professor of Biology</i>
Ph.D., Columbia University	

Hiatt Institute in Israel

Ernest Stock, Ph.D.	<i>Director of the Hiatt Institute and Lecturer in Politics</i>
Asher Arian, Ph.D.	<i>Visiting Lecturer in Politics</i>
Mordecai Kamrat, Ph.D.	<i>Director of Hebrew Studies</i>
Baruch Mevorach, Ph.D.	<i>Visiting Lecturer in Modern Jewish History</i>
B. Zvi Sobel, Ph.D.	<i>Adjunct Associate Professor of Sociology</i>

Awards to Faculty on Leave 1970-71

Maurice Auslander, Professor of Mathematics	
University of Illinois and Queen Mary College, University of London	
Joseph S. Berliner, Rosen Professor of Economics	
National Science Foundation Grant to U.S.S.R.	
James E. Duffy, Professor of Romance Literature and History	
Social Science Research Council Grant	
David M. Freifelder, Associate Professor of Biochemistry	
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Index

Absence from Examinations	30
Academic Regulations	28
Administration of the University	229
Admission	23
Anthropology	46
Application	23
Areas of Study and Courses	20, 69
Auditing Courses	29
Benjamin Center	14
Biochemistry	54
Biology	60
Biophysics	66
Brandeis University	8
Calendar	4
Chemistry	68
Comparative History	77
Contemporary Jewish Studies	82
Continuation	33
Credit for Work Done Elsewhere	31
Cross-Registration	85
Danielsen School	10
Degree Requirements, General	34
Dining Facilities	21
Directories	211
Dismissal	34
Dissertation	36
Employment, Student	45
English and American Literature	85
Expulsion	34

Faculty	212
Fees	39
Fellowships	43, 195
Fierman School	10
Financial Assistance	43
Fisher School	10
Foreign Students	26
Full-Time Resident Status	32
General Information	19
Grades	30
Graduate Council	228
Health Office	21
Heller School	8
Hiatt Institute	21
History of American Civilization	93
History of Ideas	100
History of the Graduate School	19
Housing	20
Incompletes	30
International Programs	21
Kutz School	11
Language Requirements	36
Leave of Absence	33
Loan Funds	45
Lown School	11
Mathematics	109
Mediterranean Studies	114
Music	120
Near Eastern and Judaic Studies	127
Objectives of Graduate School	19
Oral Examination, Final	38
Organization	7

Part-Time Resident Status	32
Philosophy	136
Physics	143
Politics	152
Post Resident Students	33
Program, Change of	29
Psychological Counseling Center	22
Psychology	164
Refunds	42
Registration	28
Research Assistantships	44
Residence Requirements	31
Resident Counsellorships	45
Rosenstiel Medical Science Research Center	9
Sachar Program	13
Scholarships	43
Sociology	177
Special Students	33
Teaching Assistantships	44
Theater Arts	187
Trustees	211
University Organization	7
Wien Program	12
Withdrawal	34

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